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ABSTRACT

A study examined the impact of written feedback on goals and self-efficacy, and the impact of goals and self-efficacy on changes in writing performance. Subjects were 137 students in a second-semester freshman-level college English composition class and 5 second-semester graduate assistant teachers. Consistent with social learning theory, results indicated that, among motivational variables, the best predictor of change in writing performance was changes in self-efficacy for writing skills. Among types of written feedback the students received, the best predictor of changes in writing skill self-efficacy was the grades that the students received. Results also indicated that the students entered the semester with limited knowledge about the writing process or their ability, but by the end of the semester, they began to understand the writing skills targeted in an earlier study, and, consequently, their understanding of the writing process, their understanding of their own ability, and their self-efficacy increased. Among the types of written feedback, the best predictor of changes in writing performance was the number of task-specific comments that the students received. In addition, the teachers who gave the most task-specific comments also saw their students' writing scores improve the most. Findings support A. Bandura's (1986) contention that self-efficacy is malleable and positively related to improvements in performance. Findings concerning student goals are more ambiguous. (Contains 63 references, and 21 tables and 14 figures of data. Appendixes present a writing prompt, a scoring rubric, data analysis, directions for coding, and 9 tables of data.) (Author/RS)

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The Effects Of Written Feedback On Motivation And Changes In Written Performance

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ABSTRACT

Previous research on student goals (Butler, 1987) indicated that giving students written task specific comments increased their task involvement and performance while giving students a grade or written praise increased their ego involvement and failed to improve their performance. Bandura (1986) had argued that for feedback to alter self-efficacy for a given task, it must alter one's perception of the ability to successfully complete the task. Given these broad based statements, the present research examined the impact of written feedback on goals and self-efficacy, and the impact of goals and self-efficacy on changes in writing performance.

One hundred thirty seven students in a second semester freshman level college English composition class and five second semester graduate assistant teachers participated in this research. Consistent with social learning theory, I found that, among the motivational variables, the best predictor of changes in writing performance was changes in self-efficacy for writing skills. Among the types of written feedback the students received, the best predictor of changes in writing skill self-efficacy was the grades that the students received. While this may seem to indicate a recursive path from grades to self-efficacy to performance to grades and so on, the relationship is not that simple. I further found a weak statistically non-significant correlation between initial writing skill self-efficacy ($r = -.1$) and writing performance at the beginning of the semester that became somewhat stronger, as well as statistically significant ($r = .31$) by the end of the semester. This indicates that the students entered the semester with limited knowledge about the writing process or their ability, but by the end of the semester, they began to understand the writing skills targeted by Zimmerman and Bandura (1994), and consequently, their understanding of the writing process, their understanding of their own ability, and their self-efficacy increased.

Finally, I found that, among the types of written feedback, the best predictor of changes in writing performance was the number of task specific comments that the students received. In addition, one way ANOVAs produced similar patterns among teachers on improvements in their students writing performance and the number of task specific comments they gave their students. That is, the teachers who gave the most task specific comments also saw their students writing scores improve the most.

These results support Bandura's contention that self-efficacy is malleable and positively related to improvements in performance. The results concerning student goals are more ambiguous. Consistent with Butler's research (1987, 1988), this research indicates a positive relationship among improvements in task involvement, performance, and the number of task specific comments that students' receive. Contrary to Butler's research, I failed to find positive relationships among ego involvement, grades, and the praise that students received. The results and implications of this research are discussed in more detail in the main body of this research.

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CHAPTER 1

INTRODUCTION

Statement Of The Problem

While current research indicates that different types of feedback exert different types of influences on performance (Hogarth, Gibbs,McKenzie, & Marquis, 1991), no standard way of thinking about feedback exists. Some researchers see feedback as a cue that regulates the learners' performance (Winne, 1982; Winne & Marx, 1977, 1982; Carver & Scheieir, 1990). Gagne, Briggs, & Wagner, (1992) feel that, at a minimum, feedback should provide information about the correctness of the learners performance. According to Butler and Winne (1995), studies of feedback in educational settings traditionally focus on information provided to students by an external source. They further state that the purpose of feedback is usually to confirm or change a student's knowledge as represented by answers to test or assignment questions.

Educators tend to assume that since they give feedback their students understand and incorporate that feedback (Zellermayer, 1989) and therefore, learning takes place. While emphasizing the importance of feedback, a large body of research casts doubt on this assumption. Although some researchers break down feedback into large general categories and attempt to quantify its impact on changes in performance (Butler & Winne, 1995; Bruning, Schraw, & Ronning, 1995), none of this research indicates exactly what constitutes effective feedback for certain specific skills. The problem becomes even more

nebulous when attempting to determine the effect of written feedback on an abstract concept like effective writing.

Sommers (1982) states that without written feedback, the students feel their writing needs no further consideration. At the same time students' writing frequently fails to improve, and sometimes deteriorates after receiving feedback. In defense of teachers, Sommers further states that writing teachers are seldom taught how to give effective feedback. To further complicate the issue, research indicates that students frequently ignore the feedback they receive or they fail to make changes in their papers that the feedback suggests (Sommers, 1982). Some research suggests that students need training in responding to written feedback before they benefit from the feedback (Zellermyer, 1989). It seems that before we can train teachers to give better feedback, and train students to use it, we need to understand more about what types of feedback are most beneficial.

One factor that needs to be researched more thoroughly is the impact of feedback on student motivation. When providing feedback, a teacher assumes the student is motivated to learn what the teacher is attempting to teach. Research by Dweck (Dweck, 1986; Dweck & Leggett, 1988) and Nicholls (1989) indicates that while some students want to learn and understand, others only want to perform well in comparison to others. The great paradox is that students who concentrate on performance at the expense of learning fail to learn or perform as well as students who concentrate on learning. Determining which types of teacher feedback are most likely to foster an orientation toward learning rather than performance is definitely needed.

One of the most detrimental educational perspectives that a student can adopt is one of helplessness (Pintrich & Shunk, 1996). According to Dweck (Dweck, 1986: Dweck & Leggett, 1988) people adopt helplessness responses when they have a high performance goal orientation and low self-efficacy. Self efficacy is an individual's belief that he or she can influence the outcome of a situation (Bandura, 1986). Students who feel that they can influence their learning and performance through effort and persistence tend to invest more effort in improving their learning and performance and persist longer in the face of failure, than students who feel they lack the ability to influence their learning and performance. At the same time, students with high self-efficacy tend to generate new strategies when faced with failure while students with low self-efficacy tend to tend to adopt helpless strategies (i.e., give up) when faced with failure.

While some basic research exists on the relationships between self-efficacy and writing performance, only one unpublished research report has been found that investigated the relationships of both self-efficacy and goal orientation to writing performance (Lackey, Flanigan, Cuconan, & Katz, 1996). None of the research reviewed found a relationship between either goal orientation or self-efficacy and changes in writing performance. Research by Butler (1987, 1988) indicates that certain types of feedback motivate students to concentrate on learning while other types motivate students to concentrate on their performance. However, Butler's research, like all the research mentioned here, was conducted under controlled conditions rather than in the actual classroom. Shunk (1990) believes that future research into these areas should be conducted under actual classroom conditions.

Research Questions

The purpose of this research was to gain an understanding of the relationships of written feedback to self-efficacy, goal orientation, and changes in writing performance in actual classroom settings. This study investigated the following questions:

1. To what extent are initial self-efficacy, goals, and variations in the initial written performance of students in college freshman composition classrooms related?

2. To what extent are initial self-efficacy, goals, and variations in the changes in written performance of students in college freshman composition classrooms related?

3. How are variations in the type of written comments students' receive on work done during the semester related to variations in changes in performance, self-efficacy, and goals between the beginning and end of the semester?

4. How are variations in changes in self-efficacy and goals between the beginning and end of the semester related to variations in changes in the students' written performance between the beginning and end of the semester?

Significance Of This Study

Sommers (1980; 1982), and McCarthy (1987) indicate that the written feedback that students receive from their writing teachers lowers self-efficacy and shifts students from task oriented goals to ego oriented goals. However, the current research in this area prevents any definitive conclusions because it examines relationships among these motivational variables and writing performance rather than the changes in the relationships among these variables (Shell, Murphy, & Bruning,1989; Pajaris & Johnson, 1994; Lackey et al, 1996). Furthermore, all this research was conducted under controlled conditions and therefore the results may not generalize to the classroom. The present research tried to address these issues. Under actual classroom conditions, this research examined; 1) relationships between students' initial self-efficacy, goal orientation and initial writing performance; 2) relationships between students' initial self-efficacy, goal orientation and changes in writing performance; 3) the relationship of the written feedback that students received from their writing teachers during the semester to changes in self-efficacy, goal orientation, and writing performance; and 4) the relationships of changes in students' self-efficacy and goal orientation to changes in writing performance.

In order to conduct this research, I collected data at the beginning and end of a second semester freshman English composition class. I collected data using two instruments designed to measure self-efficacy, an instrument to measure learning and performance goals, and a writing sample to measure performance. To determine the relationships among the different types of written feedback, motivation, and performance, I collected copies of all the papers that the students wrote during that semester. These

copies were made after the teachers had graded them and, therefore, contained the written feedback that the teachers gave the students on their writing. I coded the written feedback and used the coded data to determined relationships among the types of written feedback the students received, the motivational variables investigated, and the students writing performance. This research design allows examination of the relationships among the motivational variables and performance, as well as the relationships between the motivational variables and changes in writing performance. This research also allows examination of the relationships among types of written feedback and changes in writing performance and changes in motivational variables. Using the results of this research should allow insights about the types of written feedback that improves both motivation and performance.

CHAPTER 2

REVIEW OF THE LITERATURE

Review of Previous Literature and Opinion

In this chapter I review the current literature on self-efficacy, achievement goals feedback, and writing performance from several perspectives. Initially, I discuss self-efficacy, achievement goals , and feedback from a generic educational perspective. That is, I discuss the theoretical interactions among these variables as they relate to education in general, rather than any specific discipline. I follow this with a section that discusses the relationships between different types of feedback and self-efficacy, and another section that discusses the relationships between different types of feedback and achievement goals. I follow these two sections with a discussion of the interactions among self-efficacy, achievement goals, and feedback. All of this literature is from journals that focus primarily on educational research from an educational psychology perspective.

Next, I discuss the rationale for studying the relationships among self-efficacy, achievement goals, and writing performance. Much of this research is from journals that focus primarily on rhetoric and composition. In this section I show that researchers from both disciplines are discussing the same phenomena from different perspectives.

I finish the literature review with a discussion of the three articles that investigate the relationship between self-efficacy and writing performance from a quantitative perspective, and a discussion of one unpublished article that investigates the interactions among self-efficacy, achievement goals , and writing performance from a quantitative

perspective. I conclude this chapter with an interpretative summary of the current state of knowledge on these issues.

Self-Efficacy

Bandura (1986) describes self-efficacy as an individual's confidence in his or her ability to influence an outcome. People make ability judgments through a cognitive appraisal system that is unique to the individual, the task, and the situation at the moment. While related to actual ability, this judgment or perception of ability may differ from actual ability. Since people cannot distinguish between actual ability and perceived ability, they make decisions based on their perceived ability. Perceiving the ability to successfully influence an outcome, motivates people to act in several ways that improve learning and performance. People with high self-efficacy invest more effort and persist more at the task than those with low self-efficacy. When thwarted, people with high self-efficacy are more likely to attempt different strategies and less likely to give up than people with low self-efficacy. People with high self-efficacy are more likely to generate their own strategies when none of the available strategies appear adequate (Bandura, 1993).

By contrast, individuals who feel they lack the ability to affect an outcome (i.e., have low self-efficacy) act in ways that hinder learning and performance. Uncertainty about the ability to use previously mastered skills often inhibits the use of these skills, thereby preventing the development of subskills that flow from using previously mastered skills (Bandura 1986). Furthermore, since individuals with low self-efficacy invest less effort in an outcome and give up quicker than those with high self-efficacy, these

individuals seldom learn or perform as well as individuals with high self-efficacy. This poor performance reinforces low self-efficacy which leads to poorer performance, and so on. Some researchers call this "learned helplessness" (Peterson, Maier, & Seligman, 1993; Bandura, 1982; Bandura, 1986; Bandura, 1993, Stipek, 1993). At a more precise level, goal orientation theorists refer to learned helplessness as a "helpless response" and feel these responses are the result of a high performance goal orientation in addition to low self-efficacy (Dweck, 1986; Dweck & Leggett, 1988; Nicholls, 1984; Nicholls, 1989). As will be explained in the next section, performance goal orientation motivates people to seek external praise by performing well. Individuals motivated to perform well, but who feel they lack the ability to perform well, often refuse to try to perform well because failure under these circumstances would confirm their lack of ability. Refusing to try allows these individuals to protect their self image by attributing failure to lack of interest rather than lack of ability.

The primary source of self-efficacy comes from perceptions of past experiences with an action. People who attribute past outcomes to uncontrollable factors (i.e., lack of ability, unfair circumstances, and so on) tend to attribute anticipated outcomes to these same factors. Repeated failures attributed to factors perceived as uncontrollable reinforces the belief in the certainty of failure. At the same time, successes attributed to uncontrollable factors (i.e., luck, preferential treatment, easy task, and so on) fails to improve self-efficacy. By contrast, failure attributed to controllable factors (i.e., inexperience, lack of preparation, lack of time devoted to the task, and so on) also fails to

affect self-efficacy. Only success attributed to controllable factors improves self-efficacy(Bandura, 1986).

For example, consider the impact on students of a grade school teacher who criticizes poor penmanship. Since fine motor skills develop at rates that vary with the individual, some students may develop beautiful handwriting while other students' penmanship may be illegible. Some of the students with poor penmanship might equate penmanship with writing, and therefore, conclude that they lack the ability to learn to write. Some students may carry these feelings of inadequacy one step farther and believe that they lack the ability to learn. Perceiving they lack the ability to learn, these students see no reason to study. Failure to study promotes failure in the classroom. Failure in the classroom lowers self-efficacy. Low self-efficacy lowers the motivation to study. Lack of study promotes failure in the classroom. Whether or not students enter this downward spiral depends on their cognitive appraisal of their ability to effect the outcome.

Although less influential than direct experience, observing others succeed or fail also impacts self-efficacy. As with direct experience, it is the cognitive appraisal of success or failure that matters. Observing the repeated failures of someone perceived as equally or more competent undermines self-efficacy while observing the failures of someone perceived as less competent has little effect on self-efficacy. As with direct experience, the impact of observed behavior is greater when the observer has no prior experience with the task. Moreover, observations conveying effective coping strategies raise self-efficacy even in people with high-self efficacy (Bandura, 1986).

Improving performance through the use of verbal persuasion is so intuitive that people who know nothing of self-efficacy still use it to motivate themselves and others. The effectiveness of verbal persuasion depends on how deeply one believes said persuasion. As with other factors, the believability gets filtered through our cognitive appraisal system. A lasting influence on cognitive appraisal, requires the substantiation of verbal persuasion through performance. Ideally, verbal persuasion reflects a realistic assessment of ability. Repeated failures undermine a sense of efficacy not tied to realistic expectations (Bandura, 1986). In a previous scenario, I mentioned students deciding that they could not learn to write because their fine motor skill development lagged behind their classmates. Whether the students handwriting is acceptable or unacceptable is a judgment call by the teacher. Consider how this might work in the classroom. A young boy does his best on a paper and takes somewhat longer than his classmates to finish. When he gives his paper to his teacher, she publicly announces, "I can not read this, do it over". The student might decide that since his best effort was unacceptable, any future effort will also be unacceptable, under these conditions, the student might decide that he should not waste time trying to improve his writing. However, the teacher could have said, "I do not see very well, could you help read what you have written"? When the teacher found words she could not read, she could ask the student to help her, and then demonstrate the correct way to write the word and say, "It would really help me if you could write the word like this". In this case, the teacher focuses on what the student can do to improve his handwriting rather than on the inadequacy of his handwriting. If the student's handwriting improved, the teacher could compliment him for helping her. If the

handwriting failed to improve, she could mention that she is still having trouble, and ask the student for some more help.

To a certain extent, people associate physiological factors (i.e., increased heartbeat, blushing, sweating, etc.) with the inability to affect an outcome. Adverse physiological reactions to a perceived intellectual threat interferes with the ability to deal with the threat, thereby increasing the perceived magnitude of the threat (Bandura, 1986). This, in turn, increases the physiological reaction which further magnifies the threat and so on. In extreme cases, physiological reactions make it impossible for students to concentrate well enough to learn.

Achievement Goals

Nicholls (1989) argued that self-efficacy theory is fine as far as it goes but it does not consider the importance of other motivational variables. Bandura seems to assume that the consequences of self-efficacy and the factors that bring about self-efficacy affect all people in the same way. Specifically, Bandura fails to address the interaction of self-efficacy and peoples' goals.

The achievement goals theories discussed by Dweck (1986; Dweck & Leggett, 1988) and Nicholls (1989) contend that two distinct types of goals motivate people in achievement situations. Dweck calls these goals learning goals and performance goals. Nicholls calls these goals task involvement and ego involvement. Task involvement (a learning goal) motivates individuals to master some task or body of knowledge, while ego involvement (a performance goal) motivates individuals to seek positive recognition of

competence (usually by performing better than others) or to find ways to avoid appearing incompetent (usually by avoiding effort). People tend to pursue both types of achievement goals, however, one type of goal usually tends to dominate. For ease of communication, I refer to individuals with dominant ego goals as ego involved and individuals with dominant task goals as task involved.

Individuals with high ego involvement tend to process information at a more superficial level and generally fail to pursue learning beyond the level necessary to achieve positive recognition. For these reasons, individuals with high ego involvement frequently fail to retain the information they learn. (Nolen, 1988; Miller, Behrens, Green, & Newman, 1993; Greene & Miller, 1996; Pintrich & Garcia, 1991).

By contrast, task involved individuals process information at a deeper, more principled level, (Miller et al., 1993; Nolen 1988). Furthermore, task involved individuals extend their learning processes beyond the minimum required and pursue the learning process as long as they perceive progress. The combination of these factors enable task involved individuals to learn more and perform better than individuals motivated only to perform better than others.

Both the ego involved individuals and the task involved individuals react similarly in situations where they face a difficult task and have high ability perceptions (i.e., where they have high self-efficacy). The ego involved individual's motivation to get praise by performing better than others and the task involved individual's motivation to master the task, regardless of praise or condemnation, produces the same apparent results. That is, both individuals put forth necessary effort and perform well (Dweck & Leggett, 1988).

Since demonstrating superiority at tasks perceived as easy for others produces no praise, and failure to demonstrate superiority at these tasks causes humiliation, ego involved individuals see investing effort in these types of tasks as wasteful at best and potentially threatening at worst. Therefore, ego involvement motivates people to avoid tasks that others perceive as easy, and avoid tasks where they perceive their ability as inferior to others. At the same time, normatively difficult, but personally easy tasks attract ego involved individuals. (Nicholls, 1989).

Since task involved individuals seek tasks that improve their knowledge or ability, they judge task difficulty relative to their own perceived ability rather than the perceived normative ability of others. Task involved individuals avoid tasks they perceive as easy because these tasks offer little opportunity for the growth they seek. Situations involving low ability perceptions and a difficult task motivate task oriented individuals as long as they feel that they have the ability to eventually master the task. Since a difficult task coupled with low ability perceptions precludes the demonstration of superiority, ego involved individuals experience anxiety in these situations and try to avoid them (Nicholls, 1989: Dweck & Leggett, 1988).

Feedback, Instruction and Motivation

For feedback to influence performance the learners must perceive it as a cue and perceive a link between the cue, their current state, and their goals. Learners learn by recursively adjusting their approaches based on this linkage. From a motivational perspective, learners benefit from feedback when they perceive that attending to the

feedback will move them from their current state to their desired state (that is, attending to the feedback generates high self-efficacy). This model assumes that the desired state involves improved ability (i.e., high task involvement) or improved performance (i.e., high ego involvement). Later, this paper presents qualitative research indicating that much of the written feedback students receive from their composition teachers fails to provide this information. Consequently, much of the written feedback that students receive adversely affects motivation and fails to improve writing performance.

At a broad level, some researchers classify feedback as outcome feedback and cognitive feedback (Bruning, Schraw, and Ronning ,1995: Butler & Winne, 1995). Outcome feedback provides information about performance and is the most common type of feedback that students receive (Butler & Winne, 1995). However, this type of feedback has little effect on performance (Lhyle & Kulhavy, 1987: Butler & Winne, 1995; Bruning, Schraw, & Ronning, 1995). By contrast, cognitive feedback stresses the relationship between performance and the nature of the task, and therefore, exerts a more positive influence on performance (Balzer, Doherty, & O'Connor, 1989).

While Butler and Winne (1995) concede that traditional studies validate the effectiveness of external feedback, they feel that focusing on feedback in terms of information is too simplistic. Learners interpret feedback according to, "reasonably stable and relatively potent systems of beliefs" (p. 254). That is, learners interpret feedback according to their cognitive appraisal system.

Rather than focus on the way external feedback changes students' responses to traditional forms of evaluation, such as test scores, Butler and Winne (1995) feel we need

to attempt to understand feedback's role in knowledge construction. More specifically, we need to understand how external feedback, in addition to correcting and elaborating a participant's knowledge, initiates an internal dialog that generates self-generated feedback.

Self-generated feedback allows students to monitor their progress and self-regulate their learning. Self-regulated learning allows students to, "exercise a suite of powerful skills: setting goals for upgrading knowledge; deliberating about strategies to select those that balance progress toward goals against unwanted costs; and, as steps are taken and the task evolves, monitoring the accumulating effects of the engagement" (Butler and Winne, 1995, p. 245). Therefore, Butler and Winne feel that research concerning feedback should adopt a broader view about how feedback mediates performance through recursive cognitive engagement. Butler and Winne feel research on feedback should address two issues. First, this research should address self-efficacy because it influences the goals a student sets, the student's commitment to those goals, the decision making process at branch points along a path the learner constructs to reach those goals, and the student's persistence (Bandura, 1993). Next, research should address achievement goals because students who emphasize task goals over ego goals study more strategically (Meece, Bloomfield, & Hoyle, 1988; Pintrich & DeGroot, 1990).

The Relationship Between Feedback and Self-Efficacy

As mentioned earlier, Bandura (1986) believes that feedback has a major impact on self-efficacy. However, for feedback to alter self-efficacy for a given task, it must alter one's perception of the ability to successfully complete the task. Given this broad based

statement, what type of feedback might teachers give to improve their students' self-efficacy?

The following review includes fairly detailed descriptions of the treatments used. I did this to aid reconciliation of what might appear to be conflicting results. The feedback treatments differ in subtle ways, and the impact of these differences might be missed if not explicitly brought out in the review. A summary and interpretation of all these results will follow this review.

In a series of research projects Schunk (1981, 1982, 1983, 1984; Schunk & Cox, 1986) studied the effects of verbal persuasion on self-efficacy and performance. In the initial study (Schunk, 1981) the participants were 56 children ranging in age from 9 to 11 years old. The self-efficacy and arithmetic performance of each student was determined prior to treatment.

After finishing the arithmetic performance pretest, the students saw 18 pairs of division problems for 2 seconds. Next, the researchers asked the students to rate their confidence (i.e., self-efficacy) in their ability to work the problems and get the right answers. For this task, the students used a 100 point scale with 0 meaning no confidence and 100 meaning absolute confidence.

The researchers eliminated participants not exhibiting "gross deficits in arithmetic skills" on the pretest. The remaining students received random assignments to one of four groups; 1) a modeling- no attribution group, 2) a modeling-attribution group, 3) a didactic-no attribution group, and 4) a didactic-attribution group.

The modeling-no attribution group observed an adult model solve division problems and verbalize the solution strategies used to arrive at the correct answer. During the practice session, students received corrective modeling when they encountered conceptual difficulties. Concurrent with the corrective modeling, the model referred the students to the appropriate explanatory page. Students received no feedback concerning potential sources of student successes or failures.

The modeling-attribution group received the same initial treatment as the modeling group. However, in this group the trainers attributed success to hard work (e.g., "You worked really hard on that one"), and failure to insufficient effort (e.g., "You need to work harder"). To avoid linking effort and corrective feedback, the researchers never verbalized effort in conjunction with corrective feedback. That is, the researchers never said "you really worked hard on that one", or "You need to work harder" while giving corrective feedback.

The didactic-no attribution group began by studying the appropriate pages in their study packet. When these students encountered conceptual difficulty, the trainer referred the students to the proper section of the instructional packet. As with the modeling-no attribution group, these students received no feedback concerning the potential source of success or failure. The didactic-attribution group also studied the appropriate pages in their study packet, and received the same attribution feedback as the modeling-attribution group. That is, the trainers attributed success to hard work and failure to insufficient effort.

After the treatments, the researchers reassessed arithmetic performance and self-efficacy. A regression analysis using the arithmetic performance posttest as the dependent variable found a significant effect for posttest self-efficacy, posttest persistence, arithmetic performance pretest, and membership in one of the modeling groups rather than one of the didactic groups. Attribution conditions for student success produced no significant effect on arithmetic performance. Specifically, performance improved more when students' received instructional feedback (i.e., modeling feedback) than when they received only a reading assignment (i.e., didactic feedback). Feedback attributing success to effort and failure to lack of effort failed to influence performance.

In similar research Schunk (1982) modified his approach to include a monitoring group, a monitoring-past attribution group, a monitoring-future attribution group, and a control group. In the monitoring groups a monitor walked up to each student every eight minutes and asked "What page are you working on?" When the student answered, the monitors in the past-attribution group told the students, " You've been working hard." The monitors told the students in the future-attribution group, " You need to work hard." In the monitoring only group the monitor departed without comment. The control group received no treatment.

An ANOVA indicated no significant differences between the groups on the pretest of performance and a significant difference between the groups on the posttest performance. A Newman-Keuls comparison indicated that the past-attribution group performed significantly better than the other three groups The past attribution-monitoring

group also scored significantly higher on the self-efficacy questionnaire than the other three groups.

In 1983 Schunk (1983) modified the feedback conditions to an ability attribution feedback group, an effort attribution feedback group, an ability-effort feedback group, and a control group. Monitoring procedures followed those described in the previous discussion. After asking the students in the ability attribution feedback group what page he or she was working on, the monitor said, "You're good at this." In the effort attribution group the monitor said, "You've been working hard." In the ability-attribution group the monitor said, "You're good at this and you've been working hard" or, "You've been working hard and you're good at this."

An ANOVA using subtraction skill as a dependent variable indicated a significant main effect for the type of feedback the participants received. A post hoc analysis indicated that the ability feedback group scored significantly higher on the subtraction post-test and self-efficacy than the other three groups.

In 1986 Schunk (Schunk & Cox, 1986) modified his research to a 3 x 3 (Verbalization: continuous, discontinued, or none x Effort Feedback: first half, second half, or none) crossed factorial. A proctor initially reviewed explanatory pages of instruction by verbally explaining the solution steps and their application to sample problems. Students in the continuous-verbalization group received instructions to, "Think out loud." Students in the discontinued verbalization condition received instructions to think out loud for three sessions, and then received instructions to discontinue overt

verbalizations in the final three sessions. Students in the no-verbalization condition received no instructions to think out loud.

Every 6 to 7 minutes a monitor asked each student, "What page are you working on?" After this comment proctors gave effort feedback, (e.g., "You've been working hard") to the students in the first-half-effort-feedback group. After the first three sessions the proctors gave students performance feedback (e.g., "That's fine," or "OK").

In the second-half-effort-feedback group the proctors reversed the procedure. After asking what page the student was working on, the proctor said, "That's fine," or "OK" during the first three sessions and "You've been working hard" during the final three sessions. Students in the no-effort-feedback condition received only performance feedback for all six sessions.

A MANCOVA indicated significant main effects for verbalization and effort feedback. Planned orthogonal comparisons indicated that continuous verbalization conditions produced higher self-efficacy than discontinued verbalization, and providing effort feedback promoted self-efficacy more than not providing effort feedback. On the posttest measure of skill, students in the verbalization conditions performed better than students in the no-verbalization conditions. Effort feedback produced higher effort attributions than no effort feedback. Students receiving effort feedback during the first half of the research judged effort as a more important cause of success than students who received effort feedback during the second half of the research.

Students in the verbalization condition solved problems faster than those in the non-verbalization conditions, and the effort feedback condition improved the rate of

problem solving over no feedback. Furthermore, first-half effort feedback led to more rapid problem solving than second-half effort feedback. The same pattern of results occurred when researchers used the proportion of problems solved correctly.

Product-moment correlations on the posttest measures, indicated a positive relationship between self-efficacy and, skill, ability, and effort attributions. Solving more problems led to higher ability and effort attributions. This research also found a positive correlation between ability attributions and effort attributions.

Recent research by Schunk and Swartz (1993) investigated the relationship between self-efficacy, product goals, process goals, feedback, and performance. Product goals focus on the rate or quality of work ,where process goals focuses on the strategies students use to learn. Schunk and Swartz mention that one type of process goal is to acquire a learning strategy, or systematic plan for improving information processing and task performance. Product goals loosely resemble ego involvement and process goals loosely resemble task involvement.

The participants were 60 fifth grade students recommended by the teachers because they had no problems comprehending oral instructions. The researchers measured self-efficacy by asking the students to use a 100 point scale graduated in 10 point units to rate their confidence in their ability to perform five specific writing tasks on four different types of paragraphs. The writing tasks covered; 1) generating ideas, 2) deciding on the main idea, 3) planning the paragraph, 4) writing the topic sentence, and 5) writing the supporting sentences. The researchers described the four types of paragraphs as; descriptive (discusses objects, persons, or events), informative (conveys information

effectively and correctly), narrative (events sequenced from beginning to end), and narrative descriptive (sequenced steps in correct order to perform task). Schunk and Swartz averaged the 20 scores for each student to get self-efficacy scores.

Schunk and Swartz collected data on self-efficacy and skill prior to treatment and used alternate forms of the same instruments to collect data after treatment. They also collected data on self-efficacy for improvement during each of the four weeks of the study. The self-efficacy for improvement instrument differed from the self-efficacy questionnaire by asking students to rate their confidence in their ability to improve their performance on each of the five specific writing tasks for each of the four different types of paragraphs (i.e., the type of paragraph studied during the week).

Schunk and Swartz measured skill by giving the participants one topic to write about for each of the four paragraph types. The researchers used four holistic scales to score each paragraph. These scales considered; organization, sentence structure, creativity, and style to fit purpose. The scores for each scale ranged from a low score of one to a high score of four. Potential scores for each paragraph ranged from four to sixteen. The researchers used the average student scores for the four paragraphs as their indicator of skill.

The participants received random assignments to; a process goal group, a process goal with feedback group, a product goal group , or a control group. At the beginning of each session researchers told students in the process goal and process goal with feedback groups, "While you're working it helps to keep in mind what you're trying to do. You'll be trying to learn how to use these steps to write a descriptive paragraph." Participants in

the process goal with feedback condition received additional feedback three to four times per week which informed them they were making progress in learning to use the writing strategies (e.g., "You're learning to use the steps," or "You're doing well because you followed the steps in order").

The researchers told participants in the product goal group, "While you're working it helps to keep in mind what you're trying to do. You'll be trying to write a descriptive paragraph." Researchers told participants in the control group, "While your working, try to do your best." As with the other two conditions, researchers substituted the appropriate name of the paragraph during the subsequent weeks. Participants in the product and control conditions received progress feedback, (e.g., "That's a good idea to include in your paragraph," "You need to write a sentence with this idea").

To obtain data on strategy use, researchers conducted a think-aloud procedure. The participants received a writing prompt with instructions to, "say aloud everything they thought about." The researchers transcribed everything the participants said. After collecting the data, the researchers categorized the responses according to the previously learned steps the students attempted to use. The categories consisted of; writing ideas, picking the main idea, planning the paragraph, writing the topic sentence, and writing other sentences. Each verbalization indicating an attempt to use one of the strategy steps received one point. Scores ranged from 0, if the students attempted to use no strategies, to 5 if the students attempted to use all the strategies.

The process goal plus feedback group judged self-efficacy higher than the product goal or control groups. The process goal group judged self-efficacy higher than the

control group. All treatment groups demonstrated higher skill than the control group. The process goal plus feedback group demonstrated higher strategy use than the product goal and control groups. Schunk and Swartz failed to say how the process goal group fared on strategy use. The self-efficacy for improvement scores improved for all participants between the pretest and the first week. In the ensuing four weeks, the self-efficacy for improvement scores for participants in the process goal and the process goal plus feedback conditions increased while the scores of the participants in the product goal and control groups declined.

Forward regression using posttest skill as the dependent variable and, posttest self-efficacy, treatment condition, and self-efficacy for improvement as predictors (i.e., the multiple R^2) explained 83% of the variance of the posttest skill scores. Self-efficacy explained 69% of the variance. Treatment condition explained 13% of the variance. Self-efficacy for improvement explained 1% of the variance. Schunk and Swartz urge the readers to view these results with caution due to the small group sizes (i.e., 15 per group).

Summary of Self-Efficacy and Feedback

To restate this in a more condensed form, the research reviewed here indicates that feedback influences performance. All but one of the studies (Schunk 1981) also indicate that feedback influences self-efficacy. Furthermore, this research also indicated different types of feedback influence self-efficacy and performance in different ways. While the research is not systematic enough to allow hard conclusions, tentatively, it appears that in relation to improving self-efficacy:

1. Feedback attributing success to effort improves self-efficacy and performance more than no feedback.
2. Feedback attributing success to ability raises self-efficacy more than feedback attributing success to effort or feedback attributing success to effort plus ability. However, these results come from only one study.
3. Process feedback combined with process goals improves self-efficacy and performance.

The Relationship Between Feedback and Achievement Goals

Butler (1987; 1988) tested the idea that certain types of feedback improved performance by focusing students on certain types of goals. In the initial investigation (1987) Butler felt that: 1) task specific comments direct attention to the task and, therefore, increase task involvement; 2) grades and praise direct participants' attention to performance and, therefore, increase ego involvement; and 3) receiving no feedback leaves task involvement and ego involvement unchanged.

This research used an experimental design with students chosen from randomly selected sixth grade classes. On the basis of school grades, the researchers classified the students as high or low achievers. Four classes received assignments to a control group while twelve classes received assignments to one of three experimental groups (n = 50 per group). Butler used two instruments that measured divergent thinking skills and a "different circles test" to measure intellectual performance. After each of three sessions

the students received a divergent thinking skills test or the different circles test. The researchers returned the tests to the students during the following session.

The researchers wrote task specific comments on the tests for the comments group (e.g., "You thought of quite a few ideas; maybe it is possible to think of more different ideas." "You thought of quite a few different ideas; maybe it is possible for you to think of more unusual, different, original ideas") but no grade or praise. The tests from the grades group received a grade but no comments or praise. The researchers wrote "very good" on the tests from the praise group but no comments or grade.

During the first and third session the students also received instruments designed to measured task and ego involvement. This involved asking the students to rate the degree that various task and ego involved factors influenced the outcome of the their evaluations (i.e., the feedback they received from the researchers). The students' rated the degree that these task and ego factors influenced their effort and success in general.

Butler found a three way interaction between achievement goals, feedback, and school achievement. Students receiving comments attributed success more to task involved factors than ego involved factors and performed significantly better on the final performance measure than individuals in the grades, praise, and no feedback groups. The grades and praise groups scored significantly higher than the comments and no feedback groups on ego involvement. Even more important, low achieving individuals in the comments group scored as high, or higher, on the final performance measure than high achieving individuals in the grades, praise, and no feedback groups.

Butler concluded:

1. Different types of feedback promote different types of motivational orientation.
2. Individual comments yielded higher task-involved perceptions and lower ego-involved ones than either praise, grades, or no feedback.
3. Grades and praise induce ego-involved perceptions.
4. Positive information about competence will not enhance competence if it is given in a way that promotes ego rather than task involvement.

In a follow up study, Butler (1988) modified the feedback to include one group of students that received grades, one group that received comments, and one group that received grades and comments. Prior to the study, Butler divided the students into high achievers (n=22) and low achievers (n=22).

Butler conducted the treatment over three sessions. Her analysis indicated that high and low achievers in the comments only group scored higher on both convergent and divergent thinking tasks than high and low achievers in either the grades or grades and comments groups. Low achievers in the comments only group scored higher on the convergent thinking task than high achievers in the grades and comments group. On the divergent thinking task, the low achievers scored as well as the high achievers in both the grades and the grades and comments groups.

Summary of Goal Orientation and Feedback

Butler's research indicates that feedback focusing on the learning task (i.e., comments) promotes task involvement and subsequently improves performance. At the same time, feedback that focuses on praise or grades promotes ego involvement and fails

to improve performance. Furthermore, Butler (1988) found that combining task oriented feedback and performance oriented feedback causes people to react as though they received no task oriented information and focus on ego oriented issues at the expense of task oriented issues. Specifically, when participants received both task oriented comments and grades, their ego involvement increased while task involvement faild to increase. Consistent with achievement goal theory, higher task involvement positively impacts performance while higher ego involvement does not.

Rationale for Studying the Relationships Among Self-Efficacy, Achievement Goals And Writing Performance.

At every stage in our formal education process, our ability to move up to the next level is based, in part, on our ability to read and write. For this reason, our self-concept, both academically and otherwise, gets highly integrated with our language, both in writing and reading. Students who cannot, "produce appropriate texts....for whatever reason, are those who fail, deemed incompetent communicators in that particular setting" (McCarthy, 1987. pp 233).

Bandura (1993) feels that general cognitive development and functioning depend heavily on writing ability and that enhancement of perceived writing ability indirectly raises self-efficacy for all academic activities. Increased self-efficacy for writing literacy promotes higher personal standards which, in turn, promotes self-regulated learning and higher order thought processes. For some cognitive theorists, language is a way of negotiating the world (Faigley, 1986; Berlin, 1987). Britton (1978) states, " We use

writing, to get things done, whether it be in an operative mode of informing, persuading people, or in an intellectual mode of problem solving, speculating, theorizing" (p. 18). Young (as cited in Faigley, 1986) and Emig (1977), feel that writing is uniquely adapted to fostering insight and developing new knowledge.

For many, learning to write for an audience presents a complex and daunting task. Teachers know that most students have difficulty imagining readers' responses and assume that giving their students written feedback from the perspective of the audience helps students become more aware of this perspective as they write. Though these deeply held beliefs seem quite logical to many informed professionals, some researchers question their effectiveness (Clifford, 1981; Sommers, 1982; McCarthy, 1987; Schunk & Schwartz, 1993; Zellermayer, 1989). Flanigin and Menendez (Flanigan & Menendez, 1980) state,

> Few students make extensive or substantive structural and conceptual changes [to the papers they write]; most just cosmetically rework mechanics and minor matters of form.... While so many student writers have demonstrated their disinclination to revise, their writing teachers are eagerly embracing classroom methods that encourage them to rewrite....Too often we have found that despite our best efforts, students still fail to revise; or worse yet... their revisions do not improve their drafts (p. 201).

Some researchers believe that our knowledge concerning the composition process is "primitive" (Winterowd, 1976). Clifford (1981) feels the pressure of writing for an audience coupled with the persistent need for revision is especially frustrating and inhibiting to inexperienced and unskilled writers. Clifford further criticizes research on the development of writing proficiency for lacking a coherent theory and, "putting the pedagogical cart before the theoretical horse" (p. 37). While many researchers have studied the behaviors of good writers, they do not stress how such processes should be

operationalized in the classroom (Flanigan, 1980). Due to the complexity of the writing process, developing a comprehensive theory might not be possible (Britton, 1978). Other than arbitrary mechanical procedures, no right or wrong ways to write exist. We judge writing on a continuum from unacceptable (i.e., I don't understand your premise, I understand your premise but find it wanting, or both) to excellent (i.e., I understand your premise and agree with it)[1]. The same student writer might receive praise from some teachers and condemnation from others.

Themes That Point To Self-Efficacy And Achievement Goals As Factors In The Development Of Writing Ability

To advance the argument that achievement goals and self-efficacy represent major factors in the development of writing proficiency, the following section of this paper introduces themes that reappear in the current research on the development of writing ability and discusses these from a motivational perspective.

Even though researchers studying the development of writing skills seldom refer to self-efficacy as defined by Bandura (1986) or goal orientation as defined by Dweck (1986) or Nicholls (1989), their research indicates that they do indeed observe these constructs and their effects. A large body of research on the writing process considered the effects of praise versus criticism. Although none of these studies indicates that praise or criticism

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[1] The extent that one must agree with a text depends on the type of writing. For argumentative writing to be acceptable, the reader must agree with the logic of the argument. In today's society no writer, regardless of talent, could write an acceptable argumentative paper defending spontaneous generation. Descriptive forms of writing impose less restraint on agreement. Poets might describe the same sky as mauve, magenta, red, alluring, or threatening without having to defend their perceptions.

affects the quality of writing, they do indicate that students who receive criticism wrote less and developed negative attitudes about themselves as writers as well as toward writing in general (Zellermyer, 1989). According to Hillocks (as cited in Zellermayer, 1989), this tells us that negative comments adversely effect motivation; however, we do not know if praise enhances motivation or how praise and criticism interact with other cognitive factors. According to Brophy (1981), whether or not praise influences students' achievement depends on the quality of the feedback as well as the amount

Many people assume that students learn to write because teachers' provide feedback and the students successfully process that feedback (Zellermayer, 1989). Marzano and Arthur (as cited in Zellermayer, 1989) found that students frequently ignore the teachers comments. Many students did not read the comments. Other students read the comments but did not pay attention to them or chose not to make corrections based on those comments. In a think aloud protocol analysis, Hays and Daiker (as cited in Zellermayer, 1989) found that students frequently misunderstood or misinterpreted the feedback they received. Cohen (as cited in Zellermayer, 1989) found that students who considered themselves good learners (i.e., had high self-efficacy) were more likely to attend to the teachers' comments than students who considered themselves poor learners. Although some composition theorists feel that feedback should be detailed and specific (Zellermyer, 1989), Hillocks (1982) found that only students trained to respond to such feedback benefited from it. However, if we understood how novices respond to feedback, it might be possible to train teachers to give feedback that novices understand.

Stolarek's research (1994) indicates that, "Faculty who achieved the highest [writing] scores...were those who exhibited the most conscious concern about the [writing] task and how they were accomplishing it" (p. 198). Further examination of the differences between expert and novice writers led her to conclude that expert writers are more task oriented than novices and this, among other factors, leads to superior performance. Even though Stolarek fails to cite Nicholls, her analysis of the situation fits Nicholls's definition of task involvement.

Flanigan and Menendez (1980) describe the following problem with using feedback from peers as a method of teaching revision,

> Some students fear criticizing others and so offer lukewarm praise unsupported by any references to what has been written. This reticence parallels, probably, the mode of unsupported generalization frequently used by insecure writers and readers to mask what they fear are inadequacies (p. 201).

Achievement goals theory predicts this type of helpless reaction in individuals with low perceptions of ability (i.e., low self-efficacy) and high ego involvement. Citing an inadequacy in the current methods of providing feedback to students, Flanigan and Menendez (1980) say,

> Our [teachers]... comments most often summarize conclusions rather than disclose sources of meaning and inference....[our comments] do not disclose how we identify other strategies that help a writer better achieve an effect for a certain audience. Consequently, our students do not know how to transform these conclusions into strategies for change since they do not know how the conclusions relate to features of their texts which prompted our responses and helped us decide that the text needed rewriting (p. 264).

This is consistent with Butler's research (1987, 1988), which shows that students fail to perform well when feedback focuses on generalized evaluations of performance rather than strategies to perform specific tasks.

Kroll (1978) feels the difficulty students' have taking the perspective of the audience stems from egocentrism. Borrowing from Piaget, Kroll defines egocentrism as the inability to take any perspective but one's own. Britton (1975) and Kroll feel the ability to take another's perspective develops more slowly in writing than in speaking. Lunsford (1980) feels that some college students struggle with the perspective of the audience because they suffer from an arrested egocentric stage (Faigley, 1986). If we define egocentrism as the inability to adopt any perspective that does not directly benefit the ego, then the problem becomes one of task involvement verses ego involvement. That is, when egocentric students attempt to focus on the perspective of the audience, they instead focus on their perspective of the audience's perspective of themselves. Looking good in front of the audience takes precedence over communicating. Due to pursuing a performance goal rather that a learning goal, egocentric writers fail to communicate with the audience and therefore fail to look good.

In a case study, McCarthy (1987) describes a teacher who thinks he is teaching Poetry, but actually teaches one student helplessness. McCarthy calls her student Dave. Even though Dave worked hard in all his classes, he made B's in freshman composition, D's and C's in poetry, and A's in cell biology. Dave's Biology teacher treated him like a newcomer who was eager to learn. Dave's poetry teacher treated him like an outsider. McCarthey further indicates that the poetry teacher felt that understanding the true

meaning of poetry required an insight that Dave would never acquire. The poetry teacher saw his written feedback as the most useful source of information for his students and, therefore, invested a great deal of time composing extensive detailed written comments for his students. However, Dave learned very little from these comments because he failed to understand them. Consistent with expert-novice literature (Brannon & Knobluach, 1982; Margolis, 1987; Chi, Glasseer, & Farr, 1988), McCarthy says this occurred because teachers (i.e., experts) in a discipline use a language invisible to them but foreign and alien to student newcomers. The poetry teacher required no revision in response to his comments but expected carry-over responses (i.e., transference) from one paper to the next. By the second paper, Dave stopped responding to the teacher's comments and resorted to a trial and error learning strategy. Consequently, Dave repeated similar mistakes again and again.

McCarthy says Dave was unable to move beyond concrete ways of thinking and writing. Moreover, writing skills mastered in one situation did not automatically transfer to new contexts with differing problems, differing formal languages, and where he perceived differing degrees of ability. Dave's attitude changed very little during almost three years of school, and he continued to process written feedback about his writing performance at a superficial level.

On one occasion Dave spent eleven hours writing a paper for a poetry class and substantially less writing a paper for a biology class. Dave knew he would make an A on the biology paper, but said that, due to the time he put in on the poetry paper, he would be really frustrated if he did not get an A or a B. Dave received a C+ on the poetry paper

and an A on the biology paper. McCarthy says that Dave's low grades in poetry probably further alienated him from the social communication process in that classroom community and helped define his role there. Later in her paper McCarthy says that Dave wrote his papers primarily to please the teachers.

As mentioned earlier, Dweck & Leggett (1988) feel that low perceptions of ability (i.e., low self-efficacy) coupled with a high performance goal orientation elicit helpless responses. Displaying typical helpless responses, Dave, by the second paper, ceased responding to the comments from his Poetry teacher and repeatedly made the same mistakes. Dave felt he had the right ideas, but the poetry teacher did not like the way he wrote.

Consistent with Bandura's belief that self-efficacy is task specific, McCarthy reports no helpless responses outside the Poetry class. In spite of his experiences in the poetry class, Dave said that writing was not a problem for him. McCarthy attributes Dave's attitude to numerous successful classroom experiences with writing. Consistent with self-efficacy theory, Dave's cognitive appraisal of his experiences in the poetry class led him to believe those experiences constituted an aberration not indicative of his overall writing ability.

The strongest case suggesting self-efficacy and goal orientation represent prominent factors in learning to write well comes from research by Nancy Sommers. To use Sommers words (1982),

> In the beginning of the [writing] process there was the writer, her words, and her desire to communicate her ideas. But after the comments of the teacher are imposed on the first or second draft, the student's attention dramatically shifts from "This is what I want to say," to "This is what you the teacher are asking me to do (p. 150).

Without comments, the students assume they have effectively communicated their meaning and see no need to revise. However, after receiving comments, the students' written performance frequently fails to improve and often deteriorates. Sommers (1980) claims this happens because teachers fail to respond in thoughtful ways that help students engage the issues they write about and instead, focus the students on the teachers' purposes and goals for a specific text. To restate this from Dweck's (1986) perspective, the teachers' comments focused on the performance goal of perfecting the text rather than the learning goal of understanding the writing process.

Sommers identifies written feedback that concentrates on errors as a major factor that contributes to this shift in focus. It seems that many students may feel that errors on their paper indicate an inadequate performance which implies a lack of ability. From a motivational perspective this suggests two potential problems. Focusing on ability (i.e., an entity theory of intelligence) encourages performance goal involvement (Dweck & Leggett, 1988), which leads people to process information at a superficial level (Miller et al, 1993; Nolen 1988). Focusing on a lack of ability may also lower students' self-efficacy by causing them to doubt their ability to affect their learning or performance through effort. As mentioned earlier, low self-efficacy and a high performance goal involvement promote helpless responses.

In addition to written feedback that focuses on errors, Sommers identifies several other types of written feedback that might promote low self-efficacy and high performance goal involvement. She states that students frequently receive vague and contradictory comments which they fail to understand. As with comments focusing on errors, students

may attribute their failure to understand the teachers comments to their own low ability. However, even if the students' attribute their failure to something other than a lack of ability, the only way they can respond to comments they fail to understand is through trial and error response or a helpless response. Due to the complexity of the writing process, trial and error responses seem more likely to lead to repeated failures than improved performance. It seems that repeated failure at a poorly understood task should rapidly promote a helpless response (Bandura, 1986; 1993).

Sommers also says that most teachers' comments are hostile and mean-spirited, and that written feedback often fails to indicate which comments are the most important. As with the other types of comments mentioned here, students may link this feedback to feelings of intellectual inferiority that eventually cumulate in a series of helpless responses. Finally, Sommers says that most teachers' comments are not task specific. That is, the comments focus on ambiguous generalized feelings about the paper, rather than the task of improving specific sections of the students' writing.

After identifying the types of typical classroom feedback that she claims interferes with students' learning to write well, Sommers describes several outcomes of the feedback process that indicate the helpless responses and superficial information processing that she believes stem from low self-efficacy and a high ego involvement. For example, Sommers says the feedback process reduces revision to a trivial activity where students follow the teacher's rules and make required changes, but refuse to make any changes not specifically requested, even when they believe that changes are needed. Later, in her own words, Sommers says that , "A more effective text does not often evolve from such changes

alone, yet the student does not want to take the chance of reducing a finished, albeit inadequate, paragraph to chaos-to fragments-in order to rebuild it, if such changes have not been requested by the teacher" (p. 152). As I understand these comments, novice writers need to learn to see revision as a process of clarifying their thinking and the expression of their ideas, rather than one of superficial error correction (e.g., punctuation, spelling, and so on). However, much of the feedback that students receive focuses on superficial error corrections and this gives the opposite impression. Consequently, students do not understand why poorly thought out papers that are grammatically correct need revision.

Sommers concludes her argument by stating that students walk away from these experiences with nothing more than a set of rules which if followed, even though not understood, produce a "good grade." In earlier research Sommers (1982) expressed similar beliefs and further indicated that expert writers pursue a task oriented goal when she stated,

> Student writers constantly struggle to bring their essays into congruence with a predefined meaning. The experienced writers do the opposite: they seek to discover (to create) meaning in the engagement of their writing, in revision. They seek to emphasize and exploit the lack of clarity, the differences of meaning, the dissonance that writing allows (p. 219).

In defense of the teachers, Sommers says they are not taught to respond to student papers. Sommers feels we need to revise the entire approach to teaching writing. Rather than finding errors and showing students how to patch up their texts, we need to, "offer students revision tasks of a different order of complexity and sophistication from the ones that they, themselves identify, by forcing students back into chaos, back to the point where

they are shaping and restructuring their meaning (p. 143)." To restate these premises from a motivational perspective, teachers need to cease giving students written feedback that lowers self-efficacy and forces them to adopt the ego involved goal of perfecting a specific piece of text. Rather, teachers need to discover a means of raising the students' self-efficacy high enough so they adopt and pursue the task involved goal of perfecting the expression of their thoughts.

In 1989 Shell, Murphy, & Bruning used a quantitative approach to investigate the relationship between writing ability and self efficacy. One hundred fifty-three undergraduate students from a college level introductory psychology class volunteered to serve as subjects for this research. The researchers designed an instrument to measure self-efficacy for writing tasks and an instrument to measure self-efficacy for writing components (i.e., specific writing skills). The writing tasks instrument asked students to use a scale ranging form 1 to 100 to rate their confidence in their ability to communicate what they wanted to say for 16 different writing tasks. Some of the writing tasks included, writing a letter to a friend, writing a term paper of 15 to 20 pages, and composing a 400 page novel. The writing component instrument asked students to use a 100 point scale to rate their confidence in their ability to perform certain writing skills. The writing skills included, correctly spelling all words in a sentence, correctly using parts of speech, and writing a paper with good overall organization. The researchers report a Cronbach's alpha of .92 for the task subscale and .93 for the component subscale.

The researchers measured writing performance by giving students twenty minutes to respond to the essay question, "What do you believe to be the qualities of a successful

teacher?" Two researchers used a holistic scoring method to independently score each essay. The graders knew nothing about each others scores, the participants identities, or other information that might influence their analyses. Shell, Murphy, & Bruning (1989) averaged the two raters scores to create a single writing score for each subject. The researchers report an interrater reliability of .75. and correlations of .32 between writing performance and component efficacy, .17 between writing performance and task efficacy, and .62 between component efficacy and task efficacy. Stepwise regression, using writing performance as the dependent variable, eliminated task efficacy leaving R=.32 for component efficacy. In other words, the task efficacy instrument failed to explain a significant amount of variance beyond that accounted for by the component efficacy instrument.

In 1994 Pajares & Johnson conducted similar research into the relationship between self-efficacy and writing performance. Thirty students in a college level teacher preparation class served as participants for this research. Pajares & Johnson began by using the Shell, Murphy, & Bruning (1989) instruments to measure self-efficacy. Pajares & Johnson also included an instrument designed to measure personal self-efficacy. This instrument used a 6 point Likert scale and asked participants to rate their level of agreement with statements designed to measure personal self-efficacy. The researchers cite, "I give up easily," and "I do not handle myself well in social gatherings." as examples of personal self-efficacy statements. Pajares & Johnson also used the same writing prompt and scoring scales as Shell, Murphy, & Bruning (1989). However, rather than average the

scores of the two raters to arrive at a score for writing performance, Pajares & Johnson settled differences between the individual graders by consensus.

This research further differed from Shell, Murphy, & Bruning's research by collecting preliminary data on writing performance and self-efficacy, giving a treatment, and then collecting terminal data on writing performance and self-efficacy. Rather than attempt to teach writing skills, the teacher in this class sought to, "increase the number of different writing tasks the students could accomplish with the skills they already possessed" (p. 317). The tasks included, writing journal entries, diaries, lesson plans, children's stories, reviews of children's books, brief articles, and critiques. The teacher gave regular feedback designed to encourage the student. The students shared their work and the teacher encouraged the students to give each other constructive criticism. However, the students received "little feedback on their writing skills", and their writing was not graded.

A regression model using posttest writing performance as the dependent variable and forced entry of all the other variables, including pretest writing performance, retained only the pretest writing score and the writing skills self-efficacy (i.e., what Shell, Murphy, & Bruning (1989) call component self-efficacy) variables. Of the two variables retained, only the pretest writing score approached statistical significance at the .05 level. This seems to indicate that the only significant predictor of posttest writing performance that Pajares & Johnson (1994) found was prior performance on the pretest. Pajares & Johnson, also report a parameter estimate, presumably a beta weight, for writing skills self-efficacy of .02 (p. 322). This seems to indicate a lack of practical significance as well as a lack of

statistical significance for the self-efficacy for writing skills variable. The results of the regression analysis seem inconsistent with a .53 correlation between self-efficacy for writing skills and posttest writing performance that Pajares & Johnson also reported.

Pajares & Johnson report that the dependent variables accounted for 68% of the variance in the posttest writing scores (p. 322). However, since the pretest writing scores explained 32% of the variation in the posttest writing skills, this means that the motivational variables alone accounted for 36% of the variation above that explained by the pretest. Since the researchers failed to run a stepwise regression analysis or report partial correlations, is difficult to determine exactly how all these pieces fit together.

Research by Zimmerman and Bandura (1994) investigated the role of self-efficacy beliefs concerning academic attainment and the regulation of writing, academic goals, and self-standards on writing course achievement. Ninety-five freshman students from a highly selective university participated in this research. Forty-seven students attended regular classes while forty-eight students attended advanced classes.

Zimmerman and Bandura used the students SAT verbal score to determine verbal aptitude. To measure self-regulatory efficacy for writing, self-efficacy for academic achievement, grade goals, and self evaluative standards the researchers developed their own instruments. To evaluate self-regulatory efficacy for writing, the researchers asked students to use a seven point Likert scale and respond affirmatively or negatively to 25 questions indicating self-regulatory efficacy for writing. The researchers reported a Cronbach's alpha for this instrument of .91.

To measure self-efficacy for academic achievement the researchers asked the students to use the seven point Likert scale and rate their ability to make each of 12 academic grades in their respective writing classes. The grades ranged from A to F with plus (+) and minus (-) gradations. That is, the students rated their ability to make an A+ in the course, then rated their ability to make an A, followed by their ability to make an A-, and so on. The researchers reported a Cronbach's alpha for this instrument of .87.

The researchers used a similar method to determine the students' self-evaluative standards. This measure differed from the previous one by asking the students what grade they would be satisfied with. Zimmerman and Bandura reported a Cronbach's alpha on this instrument of .84. To measure grade goals the researchers modified the instrument and asked the students what grades they were trying to make. The students responded with a letter grade that corresponded to an equivalent number (i.e., A=12 through 1=F). The researchers also collected the final grades the students received in their classes and converted these grades to the previously mentioned 12 point scale.

Zimmerman and Bandura found the data failed to fit the proposed model and introduced an analysis of an alternate model they thought fit the data better. This model accounted for 35% of the variance in the final writing class grades, and indicated that improvements in self-regulatory efficacy for writing should improve self-evaluative standards and self-efficacy for academic achievement. Improvements in self-efficacy for academic achievement should improve the final grades both directly and indirectly through improving grade goals.

To further clarify relationships between motivational variables and writing performance, Lackey, Flanigan, Cunconan, and Katz (1996) investigated the relationships between self efficacy (Bandura 1986), task involvement , ego involvement (Dweck, 1986; Dweck & Leggett, 1988; Nicholls, 1989), and writing performance. College juniors involved in a longitudinal research project at a large public university served as participants for this research. Prior to beginning the longitudinal study, the entering freshman class was categorized according to race, ethnicity, gender as well as other social and economic factors. Next, individual students were randomly selected from each of these groups and asked to participate in the study. The process was controlled to insure that the final sample represented a cross section of the entering freshman class. The original sample included 150 students. Three years later, at the time of this study, 49 students remained in the project.

Lackey, et al. (1996) used instruments described by Nicholls (Nicholls, 1989) to assess task and ego involvement. Nicholls (1989) reports alphas for the task involvement measure ranging from .84 to .85. Reported Cronbach's alpha coefficients for the ego involvement instrument range from .79 to .86.

The researchers used two different instruments to measure self-efficacy. The first instrument resembled instruments described by Schunk (Schunk, 1981; Schunk, 1983; Schunk, 1984). The students received an argumentative writing prompt similar to the one later used to assess writing performance. The researchers asked the students to use a 100 point scale to rate their confidence in their ability to successfully critique the writing prompt. This gave the researchers a task specific measure of self-efficacy.

To measure the students' self-efficacy for writing skills, in addition to self-efficacy for the specific writing task, the researchers used the previously mentioned self-regulatory efficacy for writing instrument introduced by Zimmerman and Bandura (1994). Even though Zimmerman and Bandura call this instrument a "self-regulatory efficacy for writing scale," Lackey et al.. (1996) felt it measured some higher order cognitive skills necessary for satisfactory writing performance at the college level. Zimmerman and Bandura say this instrument measures, "students' perceived ability to (a) execute strategic aspects of the writing process...(b) to realize the creative aspects of writing.... and (c) to execute behavioral self-management of time, motivation, and competing alternative activities" (p. 849). This allowed Lackey et al.. to evaluate the relationships between Zimmerman and Bandura's instrument, a task specific measure of self efficacy, and writing performance.

In contrast to Zimmerman and Bandura's research, Lackey et al.,studied the relationships among these instruments and independently evaluated writing samples, rather than grades. Since variables other than performance sometimes influence grades; the researchers felt this constituted an important distinction.

After collecting the motivational data, Lackey et al.. (1996) determined writing performance by giving the participants 30 minutes to critique an argumentative writing prompt previously used by Educational Testing Services to evaluate students' writing ability. Professionally trained independent graders, not associated with the project, scored all the papers in one session. Two graders independently analyzed each paper. If their scores differed, a third independent grader determined the final score. The graders used

the holistic scoring guidelines outlined by Educational Testing Services for evaluating this prompt. The researchers report an interrater reliability of .96. That is, out of 48 scores, only twice did the scores from the initial readers differ by more than one point.

Lackey et al.,found a moderate correlation between task involvement and writing performance ($r = .35$, $p < .054$). Consistent with achievement goal theory, they also found a small negative correlation between ego involvement and writing performance. Next, the researchers conducted a stepwise regression analysis that used writing performance as the dependent variable and scores on the motivational instruments as independent variables. The regression analysis produced an R of .38 and retained task involvement with a beta weight of .345 ($p < .016$) and the writing task self-efficacy with a beta weight of .154 ($p < .269$). The regression analysis eliminated ego involvement and the self-regulatory writing skills instrument as significant predictors of writing performance. Even though the statistical program included writing task self-efficacy in the final regression model, the researchers felt that this variable lacked either practical or statistical significance.

Interpretative Summary Of The Current State Of Knowledge Concerning Relationships Among Self-Efficacy, Achievement Goals, And Feedback

Even though Butler (1987, 1988) discussed the effect of positive information about competence (i.e., non-directed praise), she failed to consider the effect of this information on self efficacy or the effects of self-efficacy on goals or performance. Her conclusions indicate that non-directed praise fails to improve performance.

It is unclear how Butler's research fits with Schunk's research. When Schunk (1983) told students they were good at the specified task, performance improved. When Butler (Butler, 1987) wrote "good " on students' papers, performance failed to improve. Schunk's research involved students working on specific school related tasks (i.e., subtraction). Schunk's students may have felt the feedback meant they were correctly applying previously learned skills and therefore gaining an improved understanding of subtraction (i.e., mastering the task). If we assume the students' desired goal state involved improved ability or improved performance, then this feedback provided information the students felt they could use to move from their current goal state to their desired goal state. The students in Schunk's ability feedback group may have interpreted his feedback as task specific comments indicating the successful progress toward task mastery. The students in Schunk's effort feedback group received praise for their effort, but no indication that the effort indicated progress toward task mastery. Given this scenario, these students in the ability feedback group should perform better than students in the effort feedback group. Subsequently, the improved performance that Schunk reported may be due to increased task involvement in the ability feedback group and increased ego involvement in the effort feedback group.

By contrast, Butler's students worked on generic measures of performance (i.e., convergent and divergent thinking tasks) that failed to require the use of specific, previously taught skills. Butler's feedback carried no information concerning methods students might use to move to the desired goal state, or even what the desired goal state might be. Furthermore, we do not know how Butler's students interpreted the word,

"good" written on their paper. Since this analysis is based on speculation, the issue remains open.

Reinterpreting Schunk's 1993 research from the perspective of achievement goal theory also provides interesting insights. The participants in the process goal group received feedback that focused them on task mastery (e.g., "You're learning to use the steps", or, "You're doing well because you followed the steps in order."). Students in the product goal group received feedback that either focused them on the performance or failed to focus them on task mastery (e.g., "You'll be trying to write a descriptive paragraph."). Students in both groups received additional task specific feedback that focused them on task mastery and indicated successful strategies to move toward task mastery (e.g., "That's a good idea to include in your paragraph." "You need to write a sentence with this idea."). Consistent with Butler's (1988) research, students receiving feedback focusing only on task mastery performed better than students receiving feedback focused on both task mastery and performance.

All the research that investigated the relationship between self-efficacy and writing performance (Shell, Murphy, Brunning, 1989; Pajares & Johnson, 1994; Zimmarman & Bandura) found a statistically significant relationships between these two variables. However, the only research that looked at the relationship between writing performance, self-efficacy, and achievement goals (Lackey et al., 1996) indicated that task involvement explains substantially more variation in writing performance than self-efficacy. Like most of the previously mentioned research, Lackey et al.,conducted their research under controlled conditions and failed to investigate either changes in writing performance or the

relationships among types of feedback and changes in self-efficacy, achievement goals and writing performance.

Unsurprisingly, Schunk (1990) feels we need research that investigates whether self-efficacy mediates the relation between achievement goals and motivation. Furthermore, Schunk feels that, "There is an urgent need for self-efficacy research conducted in the classrooms using teachers and academic content as students are learning rather than simply performing tasks" (Schunk, 1991, p. 227). To this end, the research I report here examined the relationships among self-efficacy, achievement goals, changes in writing performance, and the type of feedback that students' receive. Furthermore, I conducted this research under actual classroom conditions.

Consideration of Variables

Nicholls (1989) refers to the motivation to perform well enough to receive praise or positive recognition as ego involvement and the motivation to learn as task involvement, while Dweck refers to similar constructs as performance goals and learning goals (Dweck, 1986; Dweck & Leggett, 1989). To investigate the relationships between student goals, changes in student goals, and writing ability, this research evaluated the students' goals at the beginning and end of the semester.

Since performance goals require individuals to believe that they posses the ability to perform better than their peers, these individuals are more susceptible to the effects of low self-efficacy (Dweck, 1986; Dweck & Leggett, 1988). At the same time, Bandura (1993) believes that self-efficacy is highly task specific. Consequently, instruments evaluating self-efficacy for a specific task should emulate that task as closely as possible. However, in the case of writing, numerous sub-tasks exist within the task of writing effectively. Since Bandura indicates a loose connection between individuals' evaluations of their ability to effect an outcome and their actual ability, an individual's self-efficacy for a specific task and that individual's self-efficacy for the meta-skills that a task requires might differ. For these reasons this research investigated both students' self-efficacy for a specific type of writing, and the students' self-efficacy for writing meta-skills.

On the surface, it might seem that one could use the students' grades as a measure of performance. However, teachers might differ in their expectations and grading criteria, that is, some teachers might grade harder than others, while other teachers might give more weight to intangibles like effort, persistence, and improvement. For these reasons I

collected an independent measure of performance that still reflected what the teachers taught in class. Since the teachers taught argumentative writing during this particular semester, this research collected writing samples which required the students to critique a written argument.

Finally, to discern the relationships of certain types of written feedback to motivation and performance, this research collected copies of all the papers that the students received during the semester. The written feedback the students received was coded and quantified according to theoretically derived categories.

Specific Research Questions And Hypothesized Results

Questions 1 & 2.

1. To what extent are initial self-efficacy, student goals, and variations in the initial written performance of students in college freshman composition classrooms related?

2. To what extent are initial self-efficacy, student goals, and variations in the changes in written performance of students in college freshman composition classrooms related?

The research reviewed indicates that high self-efficacy and high task involvement, positively influences performance while high ego involvement negatively influences performance. Therefore, this research should indicate positive relationships between self-efficacy, task involvement, and performance, as well as, a negative relationship between ego involvement and performance. However, the relationship between ego involvement

and performance may be to small to approach statistical significant at the .05 level. These relationships should be evident in the initial performance as well as changes in performance.

Question 3.

How are variations in the type of written comments students' receive on work done during the semester related to variations in changes in performance, self-efficacy, and student goals between the beginning and end of the semester?

Question 3.1 How are variations in the number of written task specific comments that students' receive on work done during the semester related to variations in changes in performance, self-efficacy, and student goals between the beginning and end of the semester?

Task specific feedback should focus students on specific parts of the task, as well as provide specific information about how to proceed. These comments will target specific sections of text and give information that allows the students to go beyond superficial error correction. For example, a teacher might circle a paragraph and write, "This seems like a good idea, but you do not give the reader enough information to follow your thought processes. Explain this in more detail." These comments should influence task involvement, self-efficacy, and performance.

Question 3.2 How are variations in the number of written comments containing non-directed praise that students' receive on work done during the semester related to variations in changes in performance, self-efficacy, and student goals between the beginning and end of the semester?

An example of non-directed praise would be the word "good" written on the students paper, but not targeted at anything specific. The research on non-directed praise and criticism is inconsistent. Schunk (1983) indicates that this type of feedback improves self-efficacy and performance. Butler (1987, 1988) indicates that this type feedback fails to improve performance and neutralizes the effect of task specific feedback. Schunk's students worked on specific tasks and may have interpreted the feedback as task specific feedback. Butler's students worked on generic tests, and may have seen no linkage between the use of specific skills and the feedback. At best, non-directed praise or criticism might have a small influence on self-efficacy and performance.

Question 3.3 How are variations in the number of written comments containing directed praise that students' receive on work done during the semester related to variations in changes in performance, self-efficacy, and student goals between the beginning and end of the semester?

Directed praise should provide performance information about certain portions of the task. An example of directed praise would be a teacher circling a specific section of

text and writing the word "good". This might provide the students with some information about how to improve their writing, but the information should be less useful than the information provided in task specific feedback (See question 3.1). Therefore, this type of feedback should weakly influence self-efficacy, task involvement, and performance.

Question 3.4 How are variations in the number of written grades that students receive on that students' receive on work done during the semester related to variations in changes in performance, self-efficacy, and student goals between the beginning and end of the semester?

Butler (1987, 1988) indicates that grades focus students on performance. This increases ego involvement and decreases performance. However, individuals with high self-efficacy for writing and high ego involvement should see good grades as a confirmation of their ability to affect their grades, thereby, increasing their self-efficacy and performance. Occasional low grades should not affect their self-efficacy, ego involvement, or performance. Consistent low grades should adversely influence self-efficacy and performance. but not ego involvement.

For individuals with low self-efficacy for writing, low grades should reinforce their low ability perceptions. Since their self-efficacy is low to begin with, bad grades should have little effect on their self-efficacy or performance. Ultimately, the relationships between grades, performance, self-efficacy, task involvement, and ego involvement depends on the interaction of several motivational variables. These interactions should

cause random fluctuation within the sample and therefore, produce little effect on motivational variables or changes in performance.

Question 3.5 How are variations in the number of contradictory or ambiguous written comments that students' receive on work done during the semester related to variations in changes in performance, self-efficacy, and student goals between the beginning and end of the semester?

The example Sommers (1982) gives of ambiguous and contradictory of feedback is a teacher targeting a specific section of text as "wordy" and needing more precision while also telling the student that the same text needs expansion so it will be more interesting (p. 141). If students interpret contradictory, or otherwise uninterpretable, feedback as indicating they lack the ability to understand what they are learning, then this should lower self-efficacy and performance. Low self-efficacy at the beginning of the semester should exacerbate this problem.

Question 3.6 How are variations in the number of written comments containing spelling corrections, grammar corrections, and sentence rewrites, that students' receive on work done during the semester related to variations in changes in performance, self-efficacy, and student goals between the beginning and end of the semester?

Students frequently receive feedback in the form of spelling corrections, grammar corrections, sentence rewrites. Research by Sommers (1980, 1982) indicates that students tend to process this information at a superficial level. Therefore this feedback should have little effect on performance, self-efficacy, task involvement, or ego involvement.

Question 4.

How are variations in changes in self-efficacy and student goals between the beginning and end of the semester related to variations in changes in the students' written performance between the beginning and end of the semester?

In contrast to research question 2, this question will determine the relationships among changes in the students' self-efficacy and student goals and writing performance. Sommers (1980) suggests that students' written performance frequently fails to improve and often deteriorates because the written feedback that students' receive in the classroom lowers self-efficacy and shifts students from a learning student goals to a performance student goals. Analyzing relationships among changes in written performance, self-efficacy, and student goals, allows this research to test Sommers' hypothesis.

CHAPTER 3

RESEARCH METHODS

The purpose of this research was to gain an understanding of the relationships of written feedback to self-efficacy, goal orientation, and changes in writing performance in actual classroom settings. More specifically, this research sought to determine the relationships among certain types of feedback on changes in performance and motivation. A p value of .05 was chosen to determine statistical significance for all analyses. These issues were addressed by collecting writing samples and data from motivational questionnaires at the beginning and end of a college semester in a freshman level English composition class.

Participants

This research used a correlational design. The research began with 235 students in a second semester freshman English composition class. After eliminating drop outs and participants with incomplete data, 151 participants remained. Of those remaining, 86 (57%) were males and 65 (43%) were females. No additional demographic data were collected on the participants.

The classes were taught by five different teachers (2 males, 3 females) teaching two classes each. The teachers were in their second semester of their first year of teaching. One of the female teachers was in her late thirties, the other teachers were in their early twenties. One of the male teachers had one year of experience teaching high school

English, the other teachers had no previous teaching experience. While not randomly assigned in the classical manner, no attempt was be made to manipulate which students attended which classes. Furthermore, there were no experimental and control groups, and no treatments.

Measures

This research used instruments similar to those used by Lackey et al., (1996). The task specific self-efficacy instrument was modified from a 100 to a 10 point scale so this data could be collected on sheets that could be scanned into a computer database. Zero meant the students had no confidence in their ability to critique the prompt, and 9 meant the students had absolute confidence in their ability to critique the argument.

The Zimmerman and Bandura (1994) instrument was used to measure the students self-efficacy for writing meta-skills. As mentioned previously, even though Zimmerman and Bandura call this instrument a self-regulatory efficacy for writing scale, they state that this instrument measures "students'perceived ability to (a) execute strategic aspects of the writing process... (b) to realize the creative aspects of writing... and (c) to execute behavioral self-management of time, motivation, and competeing alternative activities" (p. 849). Therefore it appears that this instrument measures higher order thinking cognitive skills necessary for effective writing performance. Zimmerman and Bandura report a Cronbach's alpha for this instrument of .91. Nicholls (1989) instruments were used to measure task and ego involvement. Nicholls reports Cronbach's alphas from .84 to .85 for task orientation and Cronbach's alphas ranging from .79 to .86 for ego orientation.

Since this writing course focused primarily on learning argumentative writing, written performance was measured by asking the students to critique a written argument. The argumentative prompt the students critiqued was formerly used by Educational Testing Services (Appendix 1) for this purpose. The students critiqued the writing prompt after completing the motivational questionnaires.

A team of trained professional graders, not associated with this research, used holistic scoring techniques (Appendix 2) similar to those used by Educational Testing Services to score the writing prompts. The graders evaluated all the initial papers in one session, and later the same graders evaluated all the final papers in one session. Two professionally trained readers read and graded each paper. If the scores of the two readers differed by only 1 point, the graders gave the paper the higher score. If the scores of the two readers differed by more than 1 point, a third reader determined the final score. If the third readers score matched either of the first two readers scores, the matching scores became the final score. If the third readers score failed to match one of the first two readers scores, the two closest scores were chosen, and the paper received the higher of the two closest scores. Beyond this, none of the graders knew the other graders scores or any other data that might influence their decision making. To motivate the students to perform their best, the students' scores on the initial writing prompt were added to their mid-term test grade and their scores on the final writing prompt were added to their final test grade. The possible scores on the writing samples ranged from 0 to 5. The initial intention was to let the students know how they scored on the initial prompt as soon as the writing samples were graded. However, due to communication failure, only one of the

teachers followed this procedure. The impact of this communications failure will be discussed in chapter 5.

The fact that the other teachers failed to inform the students of their initial writing scores might also indicate that the teacher who correctly followed the instructions was also more task-focused than the other teachers. If so, then this teacher might have also given more verbal task specific comments that would also have improved his students writing and task involvement. However, there is no way to know this.

Coding The Feedback

To determine the type and amount of written feedback that students received during the semester, all papers returned to the students during the semester were copied and the copies given to the researcher. The feedback on these papers was coded and quantified according to the guidelines outlined in appendix 4.

Some of the categories used for coding had a theoretical basis while others evolved during the coding process. Butler's research (1987; 1988) indicated that task specific comments increased task involvement and performance, while grades and non-directed praise increased ego involvement and failed to improve performance. Schunk's research (1993) indicated that directed praise improved both self-efficacy and performance. Sommers (1982) contends that students receive substantial feedback in the form of punctuation corrections, spelling corrections, word usage corrections, and sentence re-writes that contribute little to the development of writing ability. For these reasons, the coding process began by attempting to classify all feedback as either; task specific comments; directed praise; non-directed praise, ambiguous or contradictory

comments, atheoretical comments, or grades. Even though additional categories were considered during the early coding process, closer analysis indicated that the original categories encompassed all the feedback the students received.

Another issue that needs clarification is exactly what constituted a comment. I defined a comment as an individual piece of information. For example, consider the following sentence, "You explained yourself well, but you need to need to work on your grammar". This sentence contains two distinct pieces of information, and, therefore, contains two comments. The exception to this rule occurs when a piece of information obfuscates the meaning of other pieces of information. In such a case, both pieces are considered a single piece of task ambiguous information. For example, consider the following sentence, "I think I see your point, but I am not sure I understand what you are trying to say". In this case, two task specific comments contradict each other and, therefore, this is considered a single task ambiguous comment. In the following section I will describe the types of written comments in greater detail.

Task Specific Comments. Task specific comments target a specific problem with a student's writing. They tell the student why the problem is a problem, or give the student unambiguous directions how to address a specific problem. Within these guidelines the category contained numerous variations on this theme. Some comments were clearly task specific and others less clearly task specific. For example, one of the writing assignments required the students to imagine themselves in Germany during the early thirties and write counter arguments to the NAZI propaganda of that time. The students frequently

presented shallow arguments like, "The Nazis believe in national socialism and this is wrong because it hurts people."

While some teachers might realize that the students need to consider some counter arguments that others might propose, merely making this suggestion fails to give the student enough information to write effective counter arguments. A more task specific approach would involve giving the student some counter arguments and forcing the student to respond to them. For example, a teacher might respond with: "Why is it wrong to hurt a small group of people if it helps everyone else?" "Do these people deserve to be hurt?" "How do you respond?" This feedback represents three highly task specific comments. The first two comments indicate specific weaknesses in the students reasoning. The third comment indicates that the student needs to respond to these arguments rather than adopt them.

An early problem with the interrater reliability was that the raters had a tendency to respond at an emotional level to these comments and categorize them as criticism. While these comments offer criticism, the criticism is not designed to humiliate the student, but to indicate problems with the student's writing and give the student an opportunity to address these problems.

Other task specific comments consisted of terms like: "Why?" Who?" "What?" or something along that line. It seemed that these comments were asking the students to clarify their writing so these comments were initially placed in a newly created category called, "clarify". However, on closer analysis, it became obvious that these comments addressed a specific weakness in the students' writing and contained information that

allowed, or possibly forced, the students to address the weakness. As such, these comments represented brief, highly focused, task specific comments.

Task Ambiguous Comments. Task ambiguous feedback indicates that the teacher had some thoughts on aspects of the student's writing but failed to give the student any useful information for taking action. For example, the previously mentioned comment, "I think I see your point here" fails to give the student any information that might help understand the teacher's thinking on this matter. The teacher follows this segue with, "perhaps you might want to consider some counter arguments." If the teacher sees the student's point, why should the student change anything? All the student can take from the sentence, "I think I see your point here, but you might want to consider some counter arguments" is that the teacher wants them to try some counter arguments. Therefore, sentences like this were coded as containing a task ambiguous comment and a task specific comment.

As mentioned previously, some teachers use ambiguous verbs like strengthen, weaken, and expand to indicate a problem or some way to address a problem. When a teacher tells a student to "Expand this discussion, " how should the student respond? Should the student add superfluous words to the section? Should the student ramble? Both of these approaches would expand the section. Is this what the teacher wants? Would either of these approaches cause the writing to improve rather than deteriorate? How can the novice answer these questions?

Another type of task ambiguous comment frequently encountered consisted of comments like: "Better word here." This leaves the reader wondering; what is wrong with

the word the student used, what constitutes a "better word," and what makes a "better word" better?

Some teachers also gave the contradictory instructions that Sommers (1986) notes. Consider the following example: "The material seems to be organized well, but the statements made without support undermine this organization." In effect, these comments tell the student that the paper is well organized and not well organized, therefore, the student needs to work on the organization. Separately, these comments represent directed praise and a task specific comment. However, when considered together, they represent a single task ambiguous comment.

Directed Praise Or Criticism. This category consisted of evaluative comments directed at specific aspects of a student's writing but which offered no additional information. Comments containing directed praise were coded as +1 point while comments containing directed criticism were coded as -1. For example "good introduction" would be coded as +1 while "poor introduction" would be coded as -1. In this case, descriptors like good, strong, weak, and so on are evaluative descriptors and were coded as directed praise or criticism.

Comments containing directed praise were sometimes embedded in other comments while at other times they stood alone. If a teacher wrote "good introduction," or circled a passage of text and wrote "good," this constituted directed praise. If a teacher used a term like "good" as a segue into another issue, this also constituted directed praise.

Non-Directed Praise Or Criticism. Non-directed praise was an evaluative comment that was not directed toward any specific passage of text or aspect of the students'

writing. As with directed praise, non-directed praise offered no information beyond the evaluation. These comments usually consisted of a teacher writing something like, "Great paper", or "This paper is unacceptable in its present state". The teachers frequently included a comment of this type on each paper, but seldom gave more than one comment of this type on any single paper. Also like the previous category, praise was coded as +1 and criticism was coded as -1.

Atheoretical Comments. Atheoretical comments consisted of superficial grammatical corrections that gave no indication why the correction made the text better. Atheoretical comments frequently took the form of spelling corrections, punctuation corrections, crossing out one word and writing another, and completely rewriting a sentence or passage of text. These comments differed from task ambiguous comments in that they gave specific information for a specific piece of text. These comments differed from task specific comments in that they were targeted entirely at patching up a piece of existing text and provided no additional information that might improve the students overall writing ability. For example, if a teacher crossed out passive verbs, or rewrote a sentence to eliminate passive verbs, this represented an atheoretical comment. However, if the teacher wrote, "Avoid the passive voice," this represented a task specific comment.

Grades. Some of the papers in this study were graded on a 10 point scale, while others were graded on a 100 point scale. To maintain consistency all grades were converted to the 5 point scale frequently used in public schools. That is, when a grade represented less that 60% of the potential total points possible, that paper received a zero; 60-70% received a one, 70-80% a two, 80-90% received a three and over 90% received a

four. This approach truncates the potential ranges of scores and therefore reduces potential variations in the students' grades. However, this allowed me to maintain the intent of this research to investigate changes in writing and changes in motivational variables under actual classroom conditions. Requiring all the teachers to use a 100 point grading scale for all their papers would have addressed this problem. Future research under controlled conditions might consider this approach. Finally, the reader should bear in mind that this research investigates grades as a form of feedback and not a measure of performance.

Inrerrater Reliability Of The Coding Feedback

In addition to coding the papers myself, two additional raters evaluated the written feedback from a randomly selected paper from each of the four teachers for whom I had complete data. The percentage of agreement among the raters is discussed from three different perspectives. First, each set of papers contained 75 comments. At least one of the other raters disagreed with me on nine of the comments, which means we agreed on 88% of the comments. Next, both raters had 75 opportunities to disagree with me. Therefore, the total number opportunities for either of the raters to disagree with me came to 150. Of the 150 opportunities for either of the two raters to disagree with me, they disagreed 13 times for an 91.33% agreement rate. Finally, there were a total of 225 (75 x 3) opportunities for the two raters to disagree with each other or with me. We disagreed among ourselves 21 times for an agreement of 91%.

Table 1.

Disagreements Among Raters On Coded Feedback.

Comment No.	Paper No.	Rater 1	Rater 2	Me
1	1	ndp	dp	ta
2	1	ndp	ta	ta
3	2	ts	ta	ta
4	3	ts	ta	ta
5	3	ts	ta	ta
6	3	dp	ta	ta
7	3	dp	ts	ta
8	3	ta	ta	at
9	3	at	ts	ta
	4	100% agreement		

Table 2.

Comments From Table 1.

Comment 1. Without indicating any passage of text, the teacher wrote, I'm glad to see you take advantage of this fact.

Comment 2. The teacher circled a passage of text and wrote, "Yes-important to clarify this".

Comment 3. The teacher marked a passage of text and wrote, "This is very confusing".

Comment 4. The teacher underlined "be rid of" and wrote, "better word here".

Comment 5. The teacher underlined a passage of text and wrote, "When read by itself, this is not a complete thought-how would you revise this?"

Comment 6. The teacher underlined a passage of text and wrote, I felt this was the best example to support your point.

Comment 7. Without marking a passage of text, the teacher wrote, "Yes, this does seem to be a problematical statement".

Comment 8. The student wrote, "forced to us" when she meant "forced to use." The teacher circled "to".

Comment 9. The student wrote, "The fact are good". The teacher circled, "fact are".

Research Design

I used Pearson Product Moment correlations to examine relationships among the variables investigated and then used multiple regression models for more detailed analysis. Due to the considerations outlined in appendix 3, this research used residualized change scores as the indicator of changes in the students scores between the beginning and end of the semester. When determining the relationship between a certain type of feedback and changes in written performance, or changes in a certain motivational variable, this research used simple regression.

When investigating which combination of predictor variables best predicted the criterion variables, this research used the all possible subsets multiple regression procedure. Thompson (1995) recommends this procedure as an alternative to stepwise regression which he feels is problematic. This procedure involves the regression of every single predictor variable on the criterion variable, the regression of every possible combination of two predictor variables on the criterion variable, then every three variable model, and so on. When all possible combinations of predictor variables have been regressed on the criterion variable, the researcher determines the best possible combination of predictor variables. Potential sources of information for determining the best possible choice of predictors include: changes in p values for each predictor variable in the model; changes in the R square for each model; and changes in the Beta weights for each predictor variable in each model.

This research assigned letters to the teachers participation in this research and used one way ANOVAs with Tukey HSD post hoc analysis to determine the differences among

teachers on changes in written performance, changes in motivational variables, and written feedback. As mentioned earlier, some teachers failed to turn in all the papers their students wrote during the semester so students with less than three papers were eliminated when considering written feedback. This left Teacher A with 32 students, Teacher B with 18 students, Teacher C with only 1 student, Teacher D with 26 students, and Teacher E with 33 students. Since teacher C only had 1 student left, this teacher was dropped from the consideration when investigating variations among teachers. One final note, Teacher B does not fare well in the following analysis. In defense of Teacher B, this person encountered some serious health problems during the semester. Both the quantity and quality of this teacher's written feedback deteriorated during the semester.

CHAPTER 4

RESEARCH FINDINGS

This analysis investigated relationships among 20 different variables. Some of these relationships were statistically significant, while other were not statistically significant. To present thesse data in an understandable format, the results are presented as they relate to the questions investigated in this research. Since the purpose of research questions 1 and 2 was to address pre-existing conditions the students brought into classroom with them and over which the teacher has no control, these questions were not investigated on a teacher by teacher basis. By contrast, research questions 3 and 4 addressed issues over which the teachers exerted control, and, therefore, teacher by teacher analysis was included in the discussion of these questions. During the discussion of these questions, non-significant relationships are either not discussed or discussed only briefly. As the analysis of this data progressed, other questions emerged. When possible, these questions were also investigated and discussed.

Reliability Of Instruments

Cronbach Alphas' were used to test the reliability of the instruments. The task involvement instrument contained 4 items, the ego involvement instrument contained 5 items, and the writing skill self-efficacy instrument contained 25 items. The initial alpha of .79 and a final alpha of .74 for task involvement were slightly below the .84-.85 range reported by Nicholls (1989). The ego involvement scores of .83 and .79 were consistent with the range reported by Nicholls (.78-.86). The writing skills self-efficacy instrument

alpha's of .95 and .92 are slightly higher than Zimmerman and Bandura reported, but consistent with the .92 alpha reported by Lackey et al.,(1996).

Two graders not otherwise associated with this research independently graded each of the writing samples. If their scores differed by one point, the paper received the higher score. If the papers differed by more than one point, a third independent grader determined the final score. The graders used the holistic scoring guidelines outlined by Educational Testing Services for evaluating this prompt. The graders scored all the written papers collected at both the beginning and end of the semester in one session. Of the 302 (i.e., 151*2) papers graded, the grades differed by more than one point on 10 occasions. Thus, the graders agreed to within one point on 97% of the papers.

Results

Research Question 1: Relationships Among Initial Motivational Variable Scores, And Initial Writing Performance

Correlations

Pearson product moment correlations were used to determine the relationships among the initial motivation scores and initial performance scores. Since this analysis looks at 10 correlations, a Bonferroni adjustment for type 1 error requires a .005 p value for a correlation to be statistically significant and yield an alpha of .05 for the collection of correlations. Using this criterion, table 3 indicates no statistically significant correlations between changes in performance and any of the motivational variables. There were,

however, statistically significant positive correlations between skill self efficacy and task involvement goals, between task specific self-efficacy and skill self-efficacy, and between task specific self-efficacy and task involvement goals.

Table 3.

Correlations Among Initial Performance And Initial Motivational Variable Scores.

	Ego Goals	Skill Self-Efficacy	Task Goals	Task Self-Efficacy
Skill Self-Efficacy	.18			
Task Goals	.29 *	.44 *		
Task Self-Efficacy	.005	.45 *	.29 *	
Performance	-.10	-.10	-.12	.04
Changes In Performance	.19	.06	.11	.10

n = 137

* indicates statistical significance at .005

Multiple Regression

This analysis used the multiple regression technique discussed on page 70 to determine which combination of initial motivational variables best predicted initial performance. The results indicated no significant relationships between the motivational variables at the beginning of the semester and performance at the beginning of the semester.

Research Question 2: Relationships Among Initial Motivational Variables And Changes In Writing Performance

Changes In Writing Performance Between The Beginning And End Of The Semester

The mean score for writing performance rose from an initial score of 1.45 (SD = 1.08) to a final score of 1.64 (SD = .89) for an overall gain of .19 on a 6 point scale. While small, these results were statistically significant , t (136) = 2.08, p <. 039. The overall effect size for changes in performance was .19. That is, during the semester the average writing ability, as measured by this instrument and scored blind by time of semester, improved by .19 standard deviations.

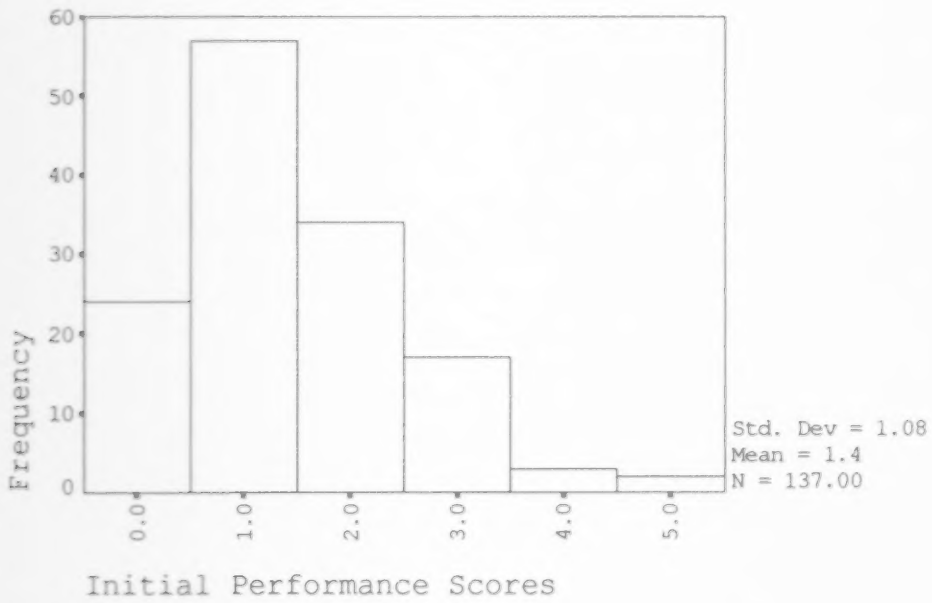

Figure 1.

Distribution Of Initial Writing Scores.

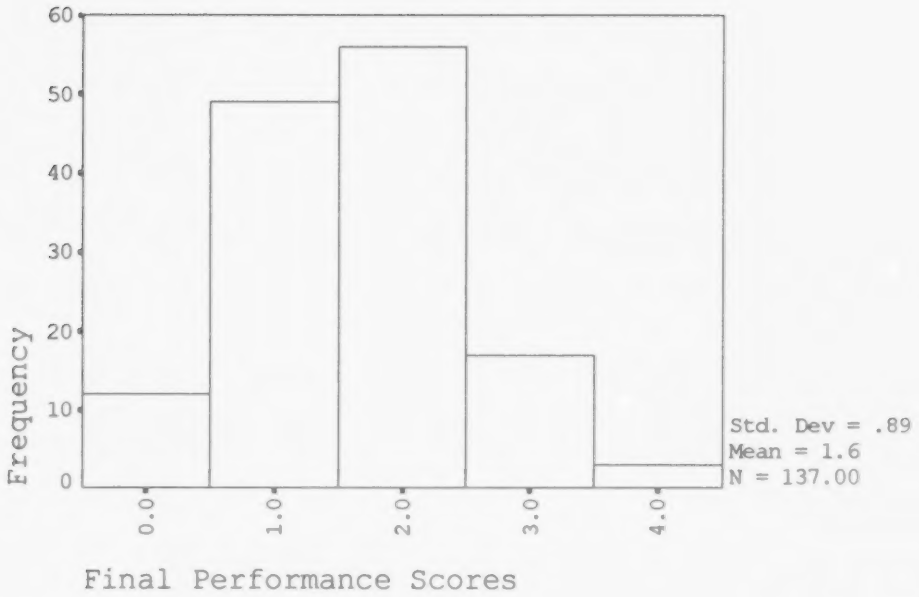

Figure 2.

Distribution Of Final Writing Scores.

Relationships Among Initial Motivational Variable Scores And Changes In Writing Performance

Correlations. Using the same criterion as the previous research question (i.e., statistical significance requires a p value less than .005), produced no significant correlations between changes in performance and any of the initial motivational variable scores.

Multiple Regression. This multiple regression analysis used changes in writing performance as the criterion variable and initial task specific self-efficacy, initial self-efficacy for writing skills, initial ego involvement, and initial task involvement as predictor

variables. The best model indicated that only ego involvement had a statistically significant relationship with changes in writing performance (F (1, 135) = 4.9, MSE = .04). However, ego involvement explained only 3.5% of the variation in changes in writing performance. Consistent with goal orientation theory (Dweck, 1986), adding task specific self-efficacy to the model explained another 1% of the variations in changes in writing performance; however, this addition failed to reach statistical significance in this model.

Variations Among Teachers On Changes In Students' Written Performance

Even though all the teachers participating in this research were in the second semester of their first year as a college teacher, there were substantial differences in their backgrounds and ages. Their ages ranged from the early twenties to the early forties. They came from Pennsylvania, Michigan, Arkansas, and Oklahoma. One of the teachers had taught in high school, while the others had not. Some were masters degree students while others were doctoral students. While I did not hypothesize any differences between teachers, it seemed reasonable to assume that differences did, in fact, exist. In order to determine whether there were differences among teachers in changes in writing performance, I conducted a one way ANOVA with a Tukey HSD post hoc analysis on the residualized gain scores for the teachers' classes.

The ANOVA indicated a statistically significant difference among teachers on changes in writing performance (F (3, 111) = 5.80, MS = .53, $p < .001$). Tukey's HSD (see table 4) indicates that the written performance for the students of Teacher D improved significantly more than the students of Teachers B and E but not significantly

more than the students of Teacher A. The written performance for the students of Teacher A improved significantly more than the students of teachers B. Since this analysis used residualized gain scores as the dependent variable, the mean scores in the post hoc analysis indicate distances from the mean improvement of all students. That is, since the mean difference between writing scores at the beginning and end of the semester was .19, the mean change in writing scores for each teacher is .19 plus the mean score for each teacher. Negative scores indicate that the mean class scores improved less than .19 points, positive scores indicate that the mean class scores improved by more than .19 points.

Table 4.

Tukey HSD Post Hoc Analysis Of Changes In Students' Writing Performance Grouped By Teacher.

Teacher	n	Mean	Teacher B E A D
B	21	-.34	
E	34	-.16	
A	32	.20	*
D	28	.42	* *

(*) Indicates Significant Differences At The .05 Level Of Signifigence.

The mean writing scores of Teacher A's class rose by .39 points, the mean writing scores of Teacher B's class fell by .15 points, the mean writing scores of Teacher D's class improved by .61 points, and the mean writing scores of Teacher E's class scores

improved only .03 points. Hence two teachers saw improvements in their class writing scores, one teacher's class' writing scores fell, while the writing scores of one teacher changed very little.

Figure 3 indicates that Teacher D's class performed differently from the other teachers in several additional ways. While the other teachers' classes seemed to vary in their changes in writing ability, Teacher D's class showed less spread in the changes in their performances. Keep in mind that 0 on this Figure indicates the mean change in performance for all students in this research. While the students of Teacher A and Teacher D improved more than the average student in this research, the students in Teacher D's classes who improved the least still improved as much as the average student in this research. By contrast, Teacher A's class saw the widest fluctuation in changes in student change scores.

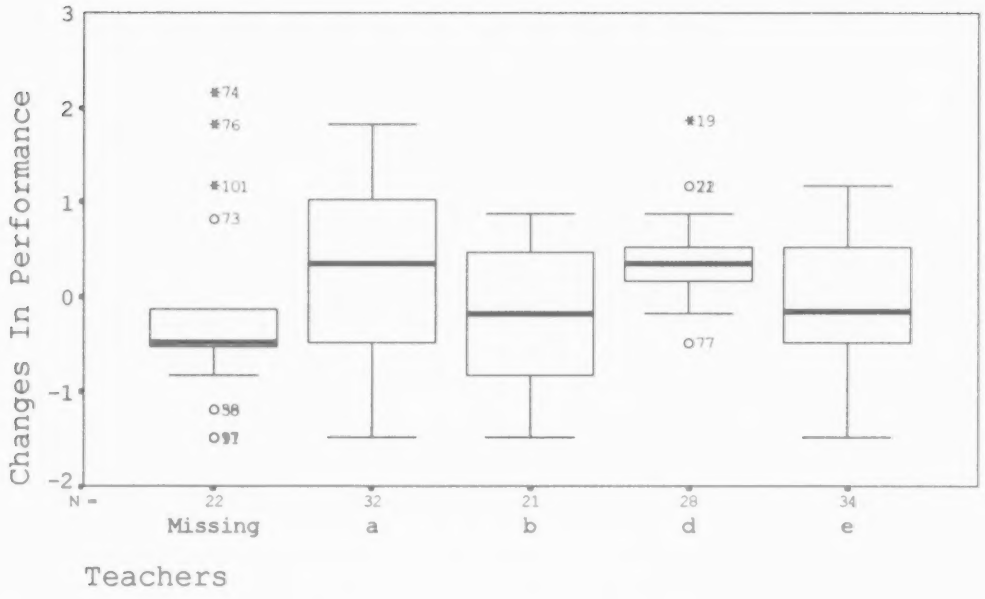

Figure 3.

Boxplot Of Differences Among Teachers On Changes In Writing Performance.

Research Question 3: Relationships Among Changes In Motivational Variables And Changes In Writing Performance

Before I could investigate the relationships among changes in writing performance and changes in motivational variables, I needed to determine if a statistically significant change occurred in these variables during the semester. Since changes in writing performance were included in the discussion of research question 2, this section begins with a discussion of changes in motivational variables.

Motivational Variable 1: Changes In Self-Efficacy For Writing Meta-Skills

The self-efficacy scores for specific writing meta-skills dropped significantly (t (137) = -14.87, $p < .000$) from an initial mean of 4.53 (SD = .87) to a final mean of 3.34 (SD = .49), for a drop of 1.19 points on a 7 point scale. The effect size was -1.2, or a drop in the average self-efficacy for writing meta-skills of 1.2 standard deviations. However, these statistics fail to indicate that the most dramatic changes between the initial scores and the final scores came from a truncation in the range of scores. The minimum score rose from 1.24 at the beginning of the semester to a minimum score of 2.15 at the end of the semester. The maximum score fell from an initial maximum score of 6.72 to a maximum score of 4.70 at then end of the semester. The correlation between skill self-efficacy and performance rose from -.10 (p = .24) at the beginning of the semester to .31 (p = .00) at the end of the semester, therefore, this change may represent a beneficial trend rather than a detrimental one.

Figure 4 indicates teachers began the year with two disparate groups of students. One group was quite confident in its writing skills while the other group was less sure. As Figure 1 indicates, only a few of the students actually wrote very well. Figure 5 indicates that by the end of the year, while still slightly, bi-modal, the distribution of scores moved toward normality.

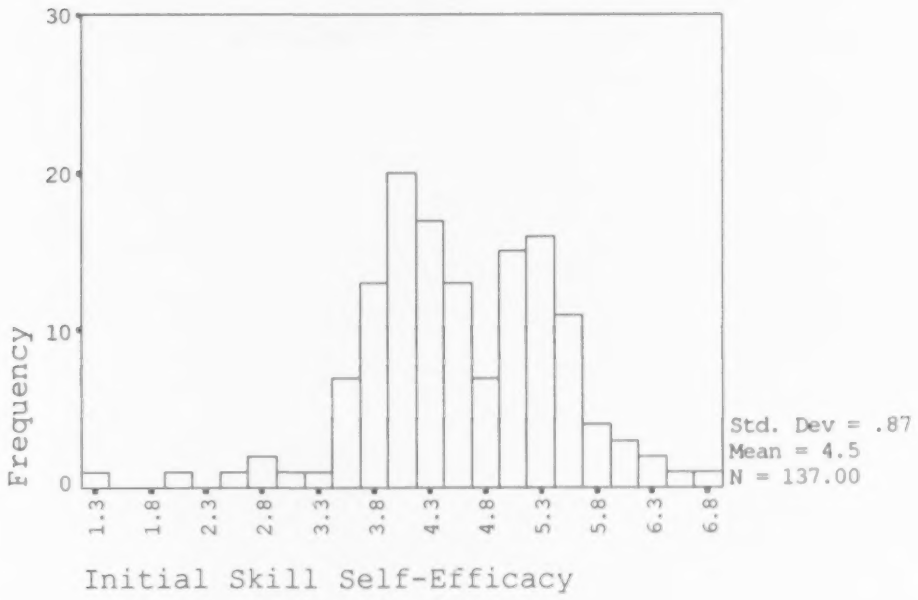

Figure 4.

Initial Self-Efficacy For Writing Meta-Skills Scores.

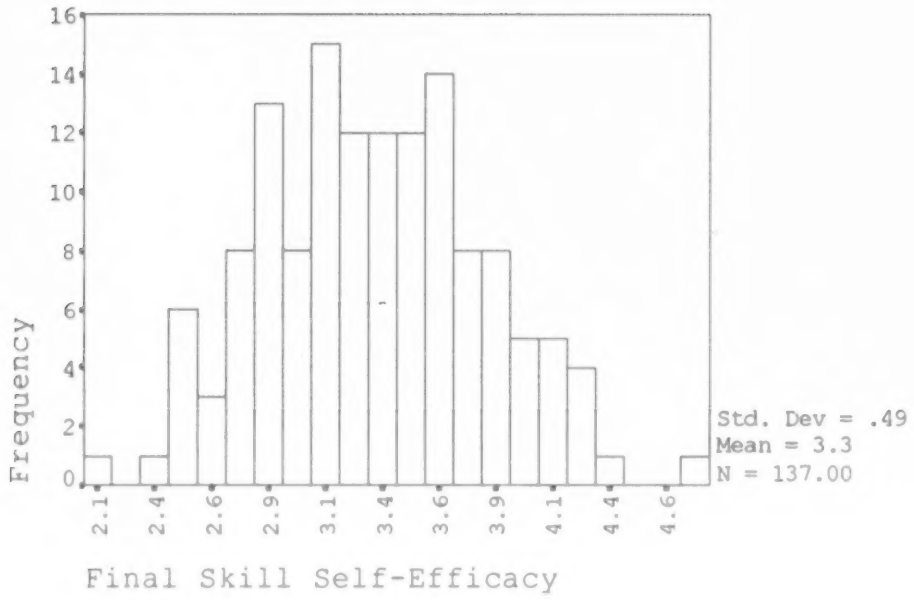

Figure 5.

Final Self-Efficacy For Writing Meta-Skills Scores.

Variations Among Teachers On Changes In Students' Self-Efficacy For Writing Skills. Since I found statistically significant differences among teachers on changes in writing performance, and a statistically significant relationship between changes in writing skills self-efficacy and changes in writing performance, it seemed that differences among teachers on changes in writing skills self-efficacy might also exist. To investigate these potential differences, I conducted a one way ANOVA with a Tukey HSD post hoc analysis that indicated a statistically significant difference among teachers on changes in writing skills self-efficacy (F (3, 11) = 7.59, MS = 21,43, $p < .001$). Since the mean self-efficacy for writing skills scores dropped 1.14 points between the beginning and end of the semester, Tukey's HSD (table 5) indicates that the mean self-efficacy for writing skills

scores fell for all teachers. The mean self-efficacy for writing skills scores for Teacher B fell significantly more than the mean scores for the other teachers.

Table 5.

Tukey HSD Post Hoc Analysis Of Changes In Students' Writing Skills Self-Efficacy Grouped By Teacher.

Teacher	n	Mean	Teacher B	D	E	A
B	21	-.39				
D	28	.02	*			
E	34	.09	*			
A	32	.17	*			

(*) Indicates Significant Differences At The .05 Level.

Motivational Variable 2: Changes In Task Specific Self-Efficacy Between The Beginning And End Of The Semester

Students' task specific self-efficacy rose from an initial mean of 6.32 (SD = .65) to a final mean of 7.17 (SD = 1.62). The instrument used a 10 point scale with a possible range of 0 to 9. As with the self-efficacy for writing skills instrument, a dependent t-test indicated a statistically significant change in the students' task specific self-efficacy ($t(136) = 4.09$, $p < .000$) with an effect size of .47.

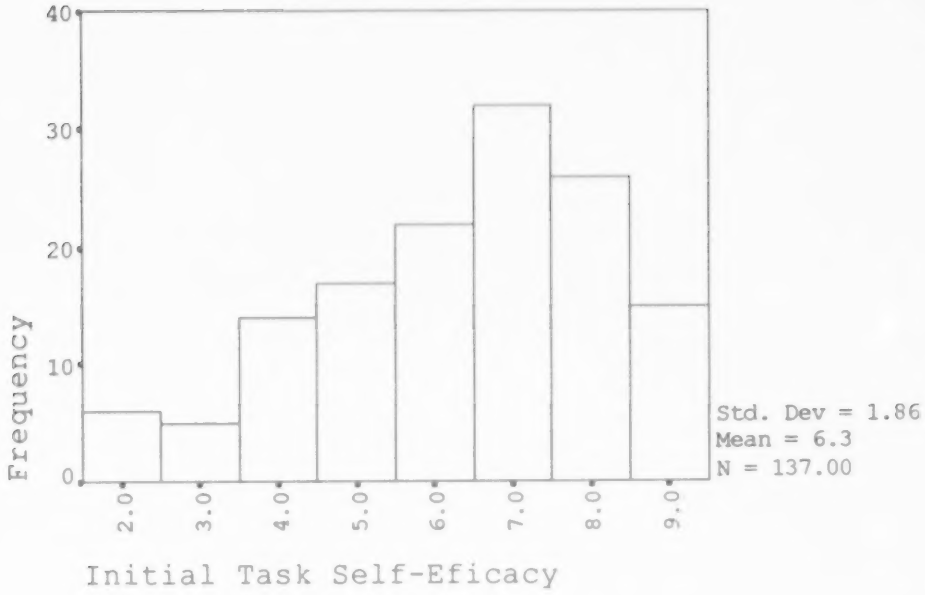

Figure 6.

Initial Task Specific Self-Efficacy Scores.

96

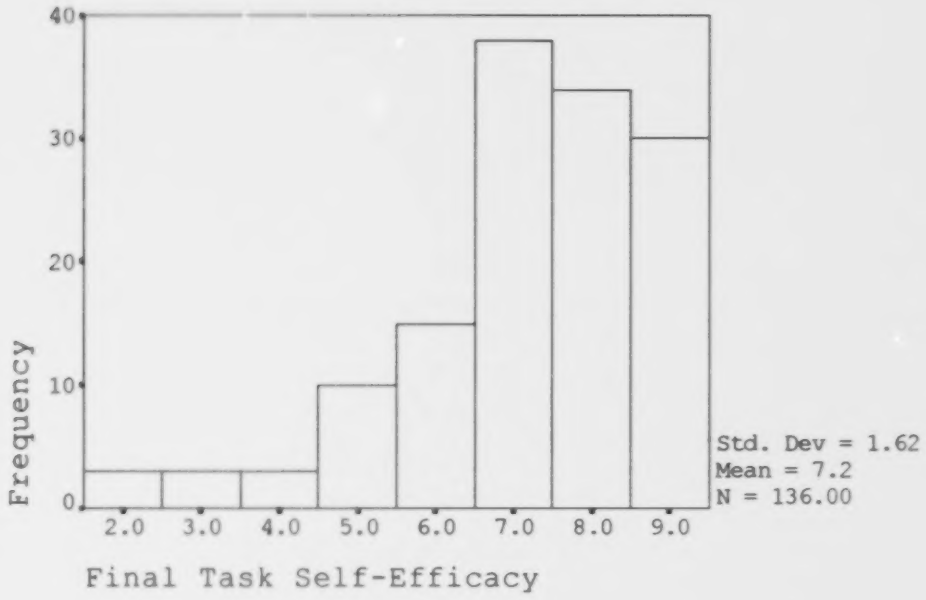

Figure 7.

Final Task Specific Self-Efficacy Scores.

Variations Among Teachers On Changes In Students' Task Specific Self-Efficacy.

To investigate differences among teachers in changes in task specific self-efficacy I conducted a one way ANOVA with a Tukey post hoc analysis. The ANOVA indicates a statistically significant difference among teachers on changes in task specific self-efficacy (F (3, 111) = 5.4, MSE = 13.41, $p < .002$). Since the mean task specific self-efficacy scores rose by .85 during the semester, Tukey's HSD (table 6) indicates that the task specific self-efficacy for the students of Teacher B fell during the semester while the task specific self-efficacy for the rest of the students of the rest of the teachers increased. That is, Teacher B's students' task specific self-efficacy changed significantly more than the other teachers' students by falling .34 points between the beginning and end of the

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semester. Note the similarity between the changes in writing skills self-efficacy (table 5) and changes in task specific self-efficacy.

Table 6.

Tukey HSD Post Hoc Analysis Of Changes In Students' Task Specific Self-Efficacy Grouped By Teacher.

Teacher	n	Mean	Teacher B	E	D	A
B	21	-1.19				
E	34	.08	*			
D	28	.15	*			
A	32	.54	*			

(*) Indicates Significant Differences At The .05 Level.

Motivational Variables 3 And 4: Changes In Goals Between The Beginning And End Of The Semester

Consistent with Dweck's contention that goal orientation is resistant to change (1986), Dependent t-tests (appendix 5, tables 1 and 2) indicated no significant changes in task or ego involvement goals between the beginning and end of the semester.

Variations Among Teachers On Changes In Students' Goal Orientation. Appendix 5, tables 4 and 5 indicate no significant differences among any of the teachers for changes in students' task or ego involvement goals.

Correlations. Table 7 presents the correlations among the changes in motivational variables and changes in writing performance. Since this correlation matrix considers 10 variables, a Bonfarroni adjustment for type one error rate requires an adjusted p value of .005 to yield a p value of .05 for the collection of correlations. Table 7 indicates statistically significant correlaitons between changes in task specific self-efficacy and changes in task involvement, and between changes in task specific self-efficacy and changes in writing skill self-efficacy. The only statistically significant correlation between changes in performance and changes in the motivational variables occurred between changes in self-efficacy for writing skills and changes in writing performance.

Table 7.

Correlations among changes in self-efficacy, goal orientation, and performance.

	Performance	Ego Goals	Task Goals	Skill Se
Ego Goals	-.10			
Task Goals	.14	.16		
Skill SE	.24 *	.12	.22	
Task SE	.21	.07	.32 *	.45 *

n = 137

* Indicates Significance At The .005 Level.

Multiple Regression Analysis Using Changes In Motivational Variables As Predictor Variables And Changes In Writing Performance As The Criterion Variable. A multiple regression analysis using changes in writing performance between the beginning and end of the semester (i.e., residualized gain scores) as the criterion variable and residualized changes in the motivational variables as predictor variables, indicated that only changes in self-efficacy for writing skills had a statistically significant relationship with changes in writing performance scores (F (1, 135) = 8.2, MSE = .057). Adding changes in task involvement and changes in ego involvement to the model explained another 3% of the variance, but neither of these variables approached statistical significance.

Research Question 4: The Effects Of Specific Types Written Feedback On Changes In Writing Performance And Changes In Motivational Variables.

Even though the original intention was for all the teachers to assign four papers during the semester, some teachers assigned more, while some assigned fewer. To further complicate the matter, some teachers indicated that certain papers were too poorly written to grade and deferred assigning a grade to that paper pending student revision. When this happened, the comments were recorded, like any other paper, and the researcher recorded the grade on that paper as a 0 (i.e., an F). Consequently students in the same classes had different numbers of papers during the semester. Finally, some teachers failed to turn in all the papers their students wrote during the semester. To address these problems, students

with fewer than three papers were eliminated from the study. This left 110 students. After coding the feedback according to the guidelines in appendix 4, this research used the average number of task specific comments, task ambiguous comments, comments containing directed praise, comments containing non-directed praise, atheoretical comments, and the average grade the students' received on their papers as predictor variables in the following regression models.

Descriptive Statistics

Table 8 summarizes the descriptive statistics for the different types of written feedback the students received during the semester. Non-directed praise and directed praise have negative minimum scores because criticism was recorded as negative praise. Table 8 also indicates that teachers gave task specific comments and task ambiguous comments more often than they gave other types of comments while non-directed praise and directed praise occurred less often.

The distribution of comments containing non-directed praise (Figure 8) appears symmetrical but truncated while directed praise (Figure 9) seems to have a bi-modal distribution. Figure10 indicates a negative skew for grades with a pronounced ceiling effect. Figures 11 and 13 indicate positive skew and floor effects for atherotical comments and task specific comments, while Figure 12 indicates a slight positive skew for task ambiguous comments.

Table 8.

Descriptive statistics for written feedback.

Variable	Mean	Std Dev	Minimum	Maximum	n
NON-DIRECTED PRAISE	.58	.78	-2.50	4.33	110
DIRECTED PRAISE	2.77	1.80	-2.00	7.50	110
GRADE	2.99	.78	1.00	4.00	110
ATHEORETICAL COMMENTS	5.99	4.97	.50	24.00	110
TASK AMBIGUOUS COMMENTS	9.59	3.75	.00	20.00	110
TASK SPECIFIC COMMENTS	10.31	6.27	.67	31.25	110

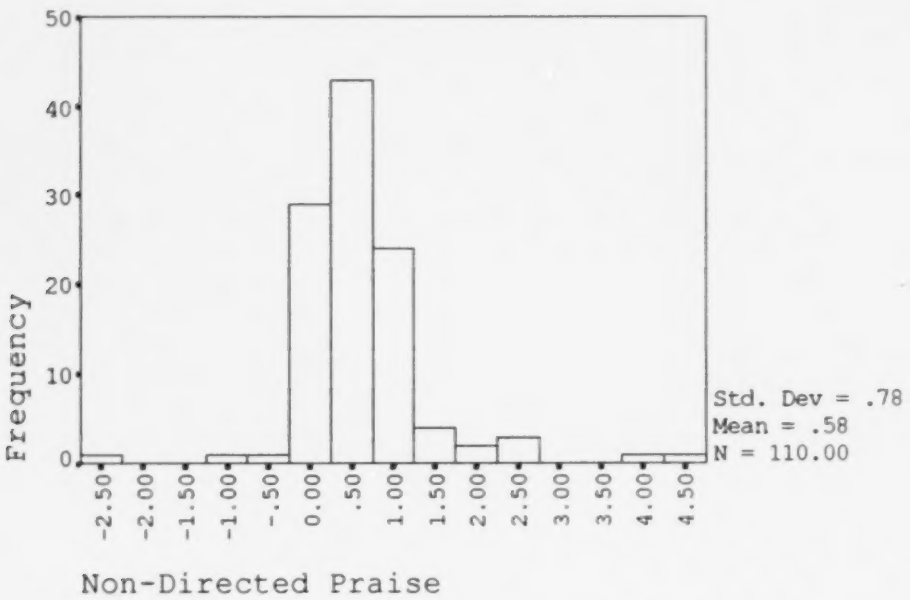

Figure 8.

Distribution Of The Average Number Of Comments Containing Non-Directed Praise That Students Received On Their Papers.

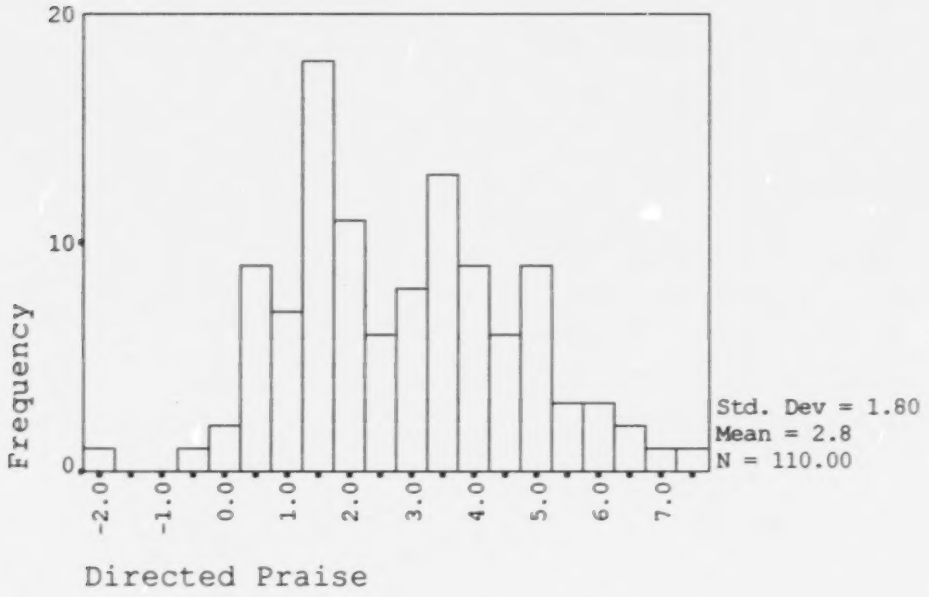

Figure 9.

Distribution Of The Average Number Of Comments Containing Directed Praise That Students Received On Their Papers.

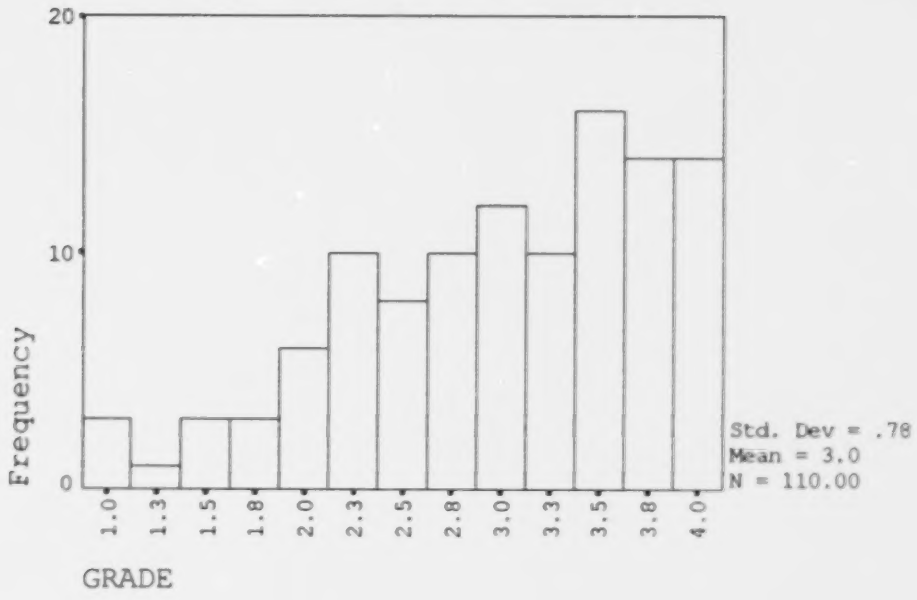

Figure 10.

Distribution Of The Average Grades That Students Received On Their Papers.

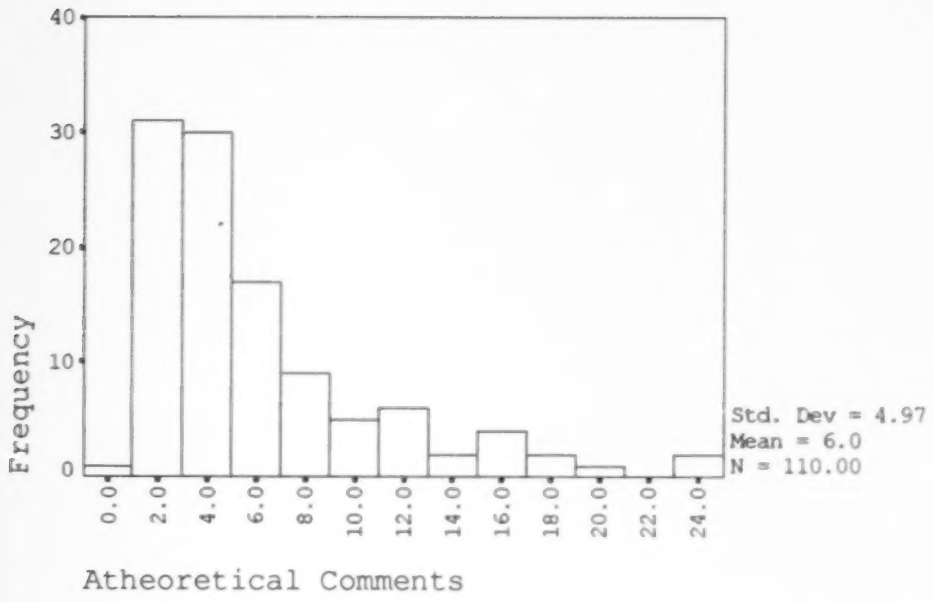

Figure 11.

Distribution Of The Average Number Of Atheoretical That Comments That Students Received On Their Papers.

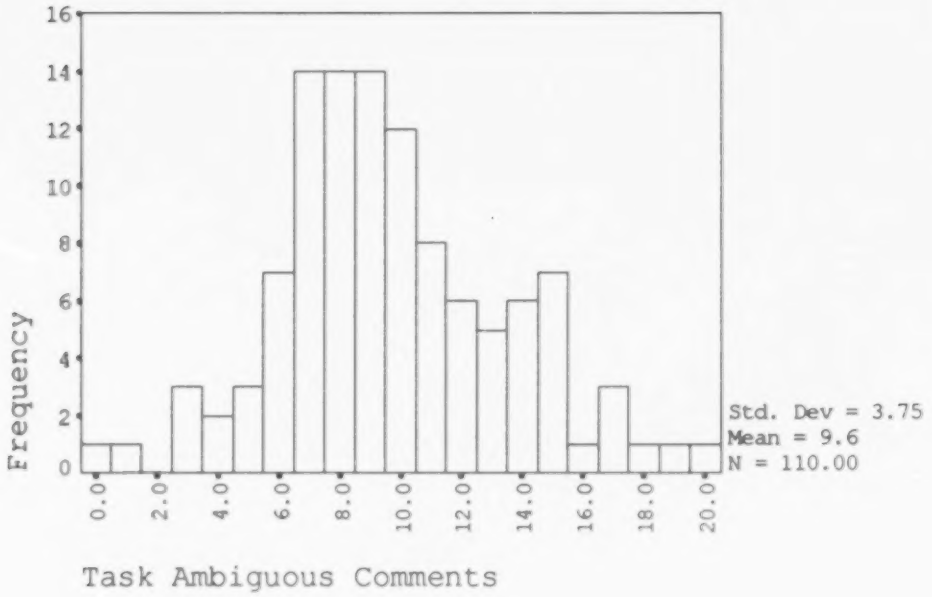

Figure 12.

Distribution Of The Average Number Of Task Ambiguous Comments That Students Received On Their Papers.

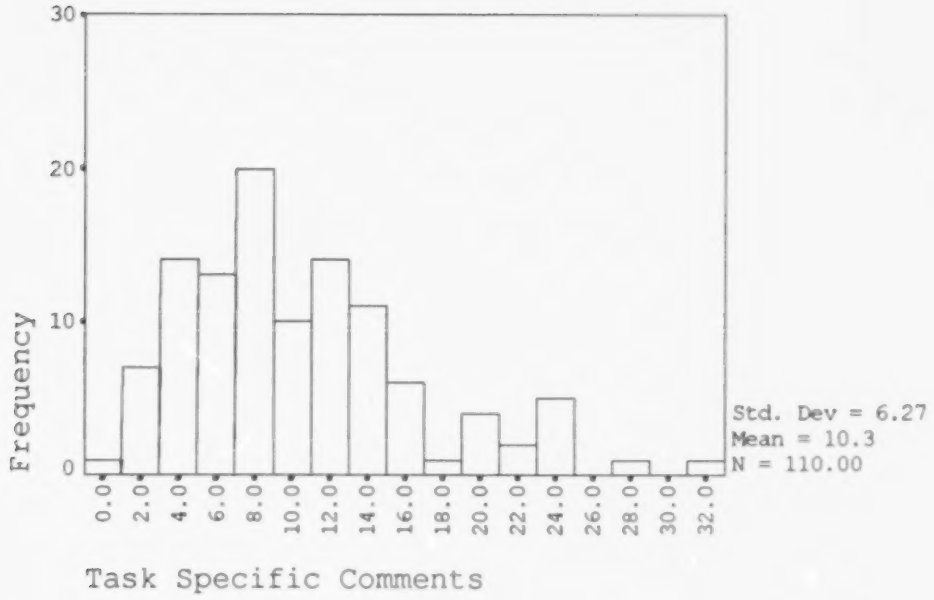

Figure 13.

Distribution Of The Average Number Of Task Specific Comments Students Received On Their Papers.

Correlations Among Types Of Written Feedback

The correlation matrix in table 9 illustrates the correlations among the types of written feedback. Using the Bonfarroni adjustment for type one error requires an adjusted p value of .003 to maintain a p value of .05 for the collection of correlations. The reader should keep in mind that this research used an independent measure of performance that was evaluated by individuals not associated with this research or the classroom teachers. Table 9 indicated no statistically significant relationship between grades and changes in performance. Since the feedback that teachers give their students and the grades that

teachers gave their students, cannot be considered independent measures, this research will indicate several relationships among grades and the other types of feedback that students received.

Notice that directed praise has a statistically significant correlation with everything except non-directed praise and atheoretical comments. The negative correlation between task specific comments and directed praise illustrates a qualitatively different approach to commenting on students' writing. When a teacher used directed praise as a segue into an issue, the comment following the segue was usually task ambiguous. For example, a teacher might write, "You set the problem up well, but..." and then follow with a contradictory or otherwise ambiguous comment. When a teacher gave task specific comments they seldom prefaced these comments with a segue. They usually told the students what the problem was, why the problem was a problem, or how to address some problem, and then moved on to the next issue.

In addition to a negative correlation with directed praise, task specific comments also had a negative correlation with atheoretical comments and a positive correlation with task ambiguous comments. The negative correlation between atheoretical comments and task specific comments seems to indicate two different approaches to commenting on papers. For example, some teachers told their students to avoid using contractions while other teachers would cross out contractions and write correct usage. While this might seem like a small issue, the task specific method targets a problem and indicates how to avoid that problem in future writing. The atheoretical approach simply indicates something the teacher wants done.

Table 9 also indicates a statistically significant positive correlation between task specific comments and task ambiguous comments. Certain teachers tended to give more task related comments. When addressing a passage of text containing only a few flaws, these teachers tended to give brief well focused task specific comments. However, some passages of text contained intricate, complicated, interrelated problems that did not lend themselves to brief, highly focused comments. When these teachers attempted to use written feedback to correct these problems, their feedback often became intricate, complicated, and interrelated to the point that it became incomprehensible. The other approach to this problem was to tell the student that the text contained major flaws and suggest that the student make an appointment with the teacher to discuss these problems. Even though suggesting a meeting with the student seemed like a reasonable approach, all the student could determine was that there was a problem that needed attention. Therefore, requesting a meeting with the student represented a task ambiguous comment.

Although failing to reach the criterion for statistical significance (.004 rather than .003), task specific comments also had a moderate negative correlation with grades ($r = -.28$). This relationship makes sense, in that papers receiving more task specific comments would also tend to receive lower grades.

Finally, there was a statistically significant correlation between grades and non-directed praise. Non-directed praise usually consisted of phrases like, "Well written". It makes sense that papers receiving non-directed praise would also receive higher grades.

Table 9.

Correlations Among Types Of Written Feedback

	T-AMBIGUOUS	ATHEORY	DPRAISE	NDPRAISE	GRADE
ATHEORY	.13				
DPRAISE	.30 *	.16			
NDPRAISE	.11	-.21	.14		
GRADE	-.03	-.05	.49 *	.37 *	
T-SPECIFIC	.35 *	-.29 *	-.28 *	.12	-.26

n = 137

(*) Indicates Significant Correlations At The .003 Level.

Correlations Among Task Specific Comments And Changes In Written Performance And Changes In Motivational Variables. Even though a dependent t-test (appendix 5, table 2) indicated non-significant changes in task involvement, table 10 indicates a statistically significant correlation between the average number of task specific comments that students received on their papers and changes in their written performance and an even stronger relationship between task specific comments and changes in task involvement. To further complicate this issue, an analysis of variance (appendix 5, table 4) shows no significant differences among teachers on changes in task involvment. This indicates that even though task involvement did not change enough to become statistically significant at the .05 level, the changes that occurred were related to the number of task specific comments that the students received during the semester. This is consistent with Butler's (1986) research which indicates that giving students task specific comments

improved their task involvement and performance. This research replicates Butler's research in a naturalistic setting involving college freshmen operating under actual classroom conditions.

Also consistent with goal orientation theory, task specific comments failed to produce any significant correlations with ego involvement. According to goal orientation theory (Dweck & Leggett, 1988) students who feel they can use comments to improve their performance well enough to receive positive recognition would attende to them while students who fail to perceive any positive recognition accruing from attending to these comments, would ignore them. This pattern of responses would produce a non-significant correlation such as that found in this study.

Consistent with Bandura's (1986) contention that perceived ability fails to accurately reflect actual ability, table 10 indicates a statistically significant correlation between the number of task specific comments the students received and improvements in the students actual ability (i.e., performance), but non-significant correlations between the number of task specific comments the students received and their perceived ability (i.e., their self-efficacy).

Table 10.

Correlation Matrix Of Changes In Writing Performance, Changes In Motivational Variables, And Task Specific Comments.

	Ego Goals	Performance	Skill SE	Task Goals	Task SE
Task Specific Comments	-.07	.19 *	.02	.22 *	.12

n = 110

(*) Indicates A Significant Correlation At The .05 Level

Correlations Among Non-Directed Praise And Changes In Written Performance And Changes In Motivational Variables. Contrary to Schunk's research (1983; Schunk & Swartz, 1993) table 11 indicates no statistically significant correlation between non-directed praise and changes in performance or changes in any of the motivational variables. It seems that writing comments like "good paper" on a students paper was unrelated to changes in student performance on an independent measure of writing achievement or changes in motivation. Several factors may explain this. The teachers seldom gave more than one comment containing non-directed praise on any paper, and even then, these comments failed to indicate what was good or bad. Therefore, it seems that comments like this would give the students no information on which to base changes in their writing skills. Furthermore, since most papers contained one comment of this nature, the students may have eventually come to ignore them. That is, the students ignored comments they consistently received but which contained no useful information.

This is consistent with Butler's (1986) contention that praise given in a way that does not promote task involvement fails to improve performance.

This research differs from Schunk's (1983; Schunk & Swartz, 1993) in several ways. First, Schunk used grade school students rather than college students. The grade school students may have been more susceptible to praise than college students. However, the main difference in this research and Schunk's is that Schunk's students received additional information that indicated the reason for the praise. For example, in the 1983 research the students were praised for their ability (e.g., "you're good at this"). In the 1993 research the students were praised for following directions (e.g., "you're doing well because you followed the steps in order"). By contrast, my research separated non-directed praise from feedback that contained other information.

Table 11.

Correlation matrix of changes in writing performance changes in motivational variables, and comments containing non-directed praise.

	Ego Inv	Performance	Skill SE	Task Inv	Task SE
		(n = 110)			
Non-Directed Praise	-.0383	-.0317	.1275	.1332	.0551

Correlations Among Directed Praise And Changes In Written Performance And Changes In Motivational Variables. Although not strong, table 12 shows a significant correlation between directed praise and improvement in the students' task specific self-

efficacy. In contrast to non-directed praise, students seemed to pay attention to comments which indicated that certain aspects of their writing were well done or needed improvement. This may be because these comments contained information the students felt they might use to improve their writing. The intermittent nature of these comments may also have contributed to their effectiveness. That is, the students may have felt these comments were unique to their writing, and therefore assigned more meaning to them.

Table 12.

Correlation matrix of changes in writing performance changes in motivational variables, and comments containing directed praise.

	Ego Inv	Performance	Skill SE	Task Inv	Task SE
Directed Praise	.0761	-.0046	.2024 *	-.0177	.1359

n = 110

(*) Indicates A Significant Correlation At The .05 Level.

Correlations Among Task Ambiguous Comments And Changes In Written Performance And Changes In Motivational Variables. Unsurprisingly, task ambiguous comments (table 13) produced no statistically significant correlations with changes in performance or changes in motivational variables.

Table 13.

Correlation matrix of changes in writing performance changes in motivational variables, and task ambiguous comments.

	Ego Inv	Performance	Skill SE	Task Inv	Task SE
Ambiguous Comments	.0574	.0096	.0496	.1456	.0791

n =110

Correlations Among Atheoretical Comments And Changes In Written Performance And Changes In Motivational Variables. Consistent with Sommers' belief (1982) that students process atheoretical comments at a superficial level, table 14 indicates that the atheoretical comments had no significant correlations with changes in written performance or changes in the motivational variables.

Table 14.

Correlation Matrix Of Changes In Writing Performance Changes In Motivational Variables, And Atheoretical Comments.

	Ego Inv	Performance	Skill SE	Task Inv	Task SE
Atheoretical Comments	.1456	-.1769	-.1742	-.0854	-.1693

n =110

Correlations Among Grades And Changes In Written Performance And Changes In Motivational Variables. The grades the students received on their papers produced a strong correlation with self-efficacy for writing skills, and a less strong, though still statistically significant correlation with improvements in self-efficacy (table 15). This correlation and the correlation with directed praise is consistent with Bandura's theory (1986), which argues that success feedback for actual performance is the strongest source of information for self-efficacy. Contrary to Butler's (1987) research findings, grades produced almost no correlation with ego involvement and stronger, albeit non-significant, correlation with task involvement.

Table 15.

Correlation Matrix Of Changes In Writing Performance Changes In Motivational Variables, And Average Grades.

	Ego Inv	Performance	Skill SE	Task Inv	Task SE
Grade	.0622	.1044	.3490 *	.1625	.2057 *

n =110

(*) Indicates A Significant Correlation At The .05 Level.

Multiple Regression Analysis Investigating The Relationships Among Types Of Written Feedback And Changes In Writing Performance And Changes In Performance

As with the previous variables in this research, multiple regression analysis was used to investigate which types of written feedback were the best predictors of changes in writing performance, and changes in motivational variables.

Changes In Writing Performance Explained By Written Feedback. To determine the best combination of types of written feedback to use in predicting changes in writing performance, this research used the types of written feedback as predictor variables and changes in performance as criterion variables in a multiple regression model using Thompson's (1995) all possible combinations method. The best model (F (3, 106) = 3.19, MSE = .08, p = .03) included task specific feedback, grade, and non-directed praise (table 16). While non-directed praise only had a Beta weight of -.15 and a p value of .14, including it in the model changed the Beta weight of grades from .17 in the two variable model to .24 (p = .03) in the three variable model. This analysis indicates that non-directed praise acts as a suppresser variable for the effect of grades. Adding non-directed praise to the model increased the R^2 from .06 to .08. Including additional variables in subsequent models changed the R^2 and p values very little.

Table 16.

Three Variable Model Using Written Feedback To Explain Changes In Writing Performance.

Variable	DF	Parameter Estimate	Standard Error	Standardized Estimate	Prob > |T|
SPECIFIC	1	0.034	0.01	0.28	0.007
GRADE	1	0.236	0.11	0.24	0.029
NDPRAISE	1	-0.152	0.10	-0.15	0.143
INTERCEPT	1	-0.941	0.37	0.00	0.012

Variations Among Teachers On Task Specific Feedback And Grades. In the previous multiple regression model, task specific comments and grades seemed to be the best predictors of changes in written performance, with non-directed praise serving as a suppresser variable for grades. The next step in this research investigated variations among teachers on the number of task specific comments that the teachers gave their students and the grades that teachers gave their students. To investigate these variations among teachers this research used one way ANOVAs with Tukey's HSD post hoc analysis

The ANOVA for differences among teachers in the number of task specific comments they gave their students indicates a statistically significant difference ($F = (3, 105) = 53.48$, $MS = 849.40$, $p < .000$). The Tukey's HSD (table 17) indicated that Teacher D gave significantly more task specific feedback than any of the other teachers, while Teacher A gave significantly more task specific feedback than Teacher B and Teacher E. Since the mean number of task specific comments was 10.31 with a standard

deviation, of 6.27, the number of task specific comments that Teacher D's students received was over 1 standard deviation above the mean. The number of task specific comments that Teacher A's students received was .37 standard deviations above the mean, while the number of task specific comments that Teacher B's students received was .68 standard deviations below the mean, and the number of task specific comments that Teacher E's students received was .8 standard deviations below the mean.

Notice the similarity between table 4 and table 17. Teacher D gave the most task specific comments and these students saw the most improvement in their writing scores. Teacher A gave more task specific comments that any teacher other than Teacher D and Teacher A's students saw their writing scores improve more than any students other than the students of Teacher D. Teachers B and E gave the least number of task specific comments and their students improved less that the students of the other two teachers. Figure 14 illustrates these differences.

Table 17.

Tukey HSD post hoc analysis of task specific written feedback grouped by teacher.

Teacher	n	Mean	Teacher E B A D
E	34	5.3328	
B	21	5.9959	
A	32	12.5568	* *
D	28	17.2019	* * *

(*) Indicates Dignificant Differences At The .05 Level.

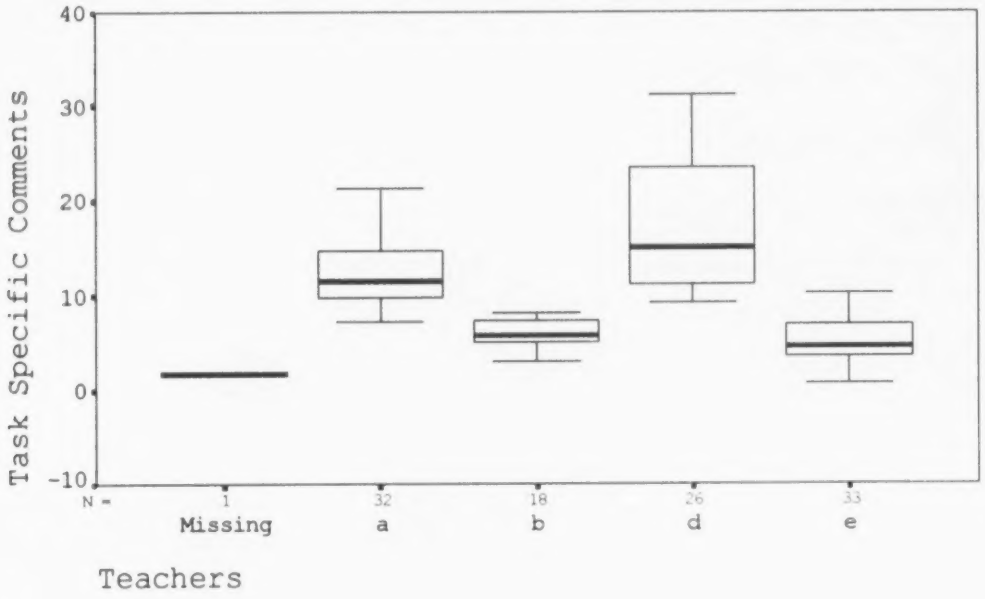

Figure 14.

Variations Among Teachers On Task Specific Comments.

An ANOVA investigating variations among teachers grades indicates a statistically significant difference among teachers on the grades they gave their students (F (3, 103) = 5.4, p <.002, MSE = 2.95). The Tukey HSD for variations among teachers on grades (table 18) indicates that teachers A and E gave significantly higher grades than Teacher B and Teacher D. Since the mean score for grades was 2.99 with a standard deviation of .78, the average grade that Teacher E's students received was .26 standard deviations above the mean. The average grade that Teacher A's students received was .13 standard deviations above the mean, while the average grade that Teacher B's students received was .01 standard deviations below the mean, and the average grade that Teacher D's students received was .1 standard deviations below the mean.

While Teacher D gave significantly lower grades than Teacher A and Teacher E, Teacher D's students' task specific self-efficacy improved more than the students of Teacher B and Teacher E. Only Teacher A's students' task specific self-efficacy scores improved more than Teacher D. Consistent with social cognitive theory, task specific self-efficacy improved when students received task specific feedback they could use to improve their writing and when their teachers indicated they were performing well.

Table 18.

Tukey HSD Post Hoc Analysis Of Grades Grouped By Teacher.

Teacher	n	Mean	Teacher D B A E
D	28	2.4819	
B	21	3.0567	
A	32	3.1031	*
E	34	3.2142	*

(*) Indicates Significant Differences At The .05 Level.

Changes In Task Specific Self-Efficacy Explained by Written Feedback. Multiple regression analysis using changes in task specific self-efficacy as the criterion variable and the different types of written feedback as the predictor variables indicated that the best model ($F(2, 107) = 4.45$, $MSE = .08$, $R^2 = .08$, $p < .01$) contained task specific comments and grades (table 19).

Table 19.

Two Variable Model Using Written Feedback To Explain Changes In Task Specific Self-Efficacy.

Variable	DF	Parameter Estimate	Standard Error	Standardized Estimate	Prob >|T|
SPECIFIC	1	0.05	0.03	0.19	0.048
GRADE	1	0.56	0.21	0.26	0.009
INTERCEPT	1	-2.23	0.76	0.00	0.004

Changes in Writing Skills Self-Efficacy Explained by Written Feedback. Multiple regression analysis using changes in writing skills self-efficacy as the criterion variable and written feedback as predictor variables indicated that grades provided the best single variable model (Table 20).

Table 20.

Single Variable Model Using Written Feedback To Explain Changes In Writing Skill Self-Efficacy.

Variable	DF	Parameter Estimate	Standard Error	Standardized Estimate	Prob >|T|
GRADE	1	0.22	0.06	0.349	0.002
INTERCEPT	1	-0.63	0.17	0.000	0.004

Changes in Task Involvement Explained by Written Feedback. In this case, multiple regression analysis (table 21) indicated that the best model (F (2, 107) = 6.27, MSE = .10, p = .003) contained grades and task specific comments. While eliminating grades from the model dropped the R^2 to .50 and increased the p value to .018, this caused little change in the Beta weight of task specific comments. Therefore, it seems the these two variables act independently on changes in task involvement goals.

Table 21.

Two Variable Model Using Written Feedback To Explain Changes In Task Involvement Goals.

Variable	DF	Parameter Estimate	Standard Error	Standardized Estimate	Prob >|T|
SPECIFIC	1	0.03	0.01	0.29	0.003
GRADES	1	0.19	0.07	0.24	0.012
INTERCEPT	1	-0.82	0.27	0.00	0.003

Changes in Ego Involvment Explained by Written Feedback. Multiple regression analysis using changes in ego involvment as the criterion variable and the types of written feedback as predictors indicated that none of the types of written feedback investigated in this research explained over 3% of the changes in ego involvment. Unsurprisingly, this analysis also indicated that none of the types of feedback investigated in this research were statistically significant predictors of changes in ego involvement goals.

CHAPTER 5

SUMMARY AND DISCUSSION

The purpose of this research was to gain an understanding of the relationships of written feedback to self-efficacy, goal orientation, and changes in writing performance in actual classroom settings. While some research existed on the relationship between self-efficacy and changes in writing ability, none of that research was conducted in a naturalistic setting. Furthermore, Nicholls (1989) suggested that the concept of self-efficacy fails to consider an individual's goal orientation and therefore gives an incomplete picture of the motivational process. When I began this research, only one study (Lackey, et al. 1996) existed on the relationships among self-efficacy, goal orientation, and writing performance. The Lackey et al., study, like those mentioned earlier in this paragraph, was conducted under controlled conditions, and investigated writing performance rather than changes in writing performance. Thus, one purpose for the present research was to expand the previous research and investigate the relationships among self-efficacy, goal orientation, and changes in writing performance under actual classroom conditions.

Research by Butler (1987, 1988) indicated that among grades, praise, and task specific comments, only feedback in the form of task specific comments caused students to focus on learning and improved their performance. Her research further indicated that when researchers combined either grades or praise with task specific comments, the students focused on performance, rather than learning, and paradoxically, their performance failed to improve. If these factors operate in the classroom the same way they did in Butler's controlled investigations, then we need to rethink our approach to

education. Therefore, I also investigated the relationships among types of written feedback that students receive under actual classroom conditions, and changes in self-efficacy, changes in goal orientation, and changes in writing performance.

Initially, 235 college freshmen enrolled in a second semester English composition class agreed to participate in this research. After eliminating drop outs and those with incomplete data, 137 students remained. The students were distributed among 5 first year graduate teaching assistants. One of these graduate assistants failed to turn in complete data, and was dropped from the study. To investigate the relationships among motivational variables and changes in writing performance, writing samples and data from motivational instruments were collected at the beginning and end of the semester. To investigate the relationships among different types of written feedback and changes in motivational variables, and changes in writing performance, the teachers made copies of all the papers the students wrote and all the written feedback they gave to their students. The teachers gave these copies to the researcher who coded and counted the different types of feedback the students received during the semester.

In this chapter, I discuss the results of this research from four perspectives. First I discuss the relationship between changes in self-efficacy and changes in writing performance. Next, I discuss the relationship between, changes in goal orientation and changes in writing performance. After this I discuss the interactions among self-efficacy, goal orientation and writing performance. I follow this by discussing the relationships among various types of written feedback and changes in goal orientation, changes in self-

efficacy, and changes in writing performance. After discussing the results of this research, I discuss the implications of this research and suggest areas for future research.

Self-Efficacy and Writing Performance

Even though the students confidence in their ability to use the specific writing meta-skills fell during the semester, their task specific self-efficacy improved along with their writing ability. When grouped by teacher, a Tukey HSD indicated similar patterns of changes in skill self-efficacy and task specific self-efficacy. That is, the teachers whose students' skill self-efficacy increased the most also saw their students' task specific self-efficacy increase the most. This is not surprising since the perception of the ability to use meta-skills involved in performing a task and the perception of the ability to perform the task should be highly correlated. These results support Bandura's contention (Bandura, 1986) that self-efficacy is situation specific and malleable under classroom conditions.

Also consistent with social cognitive theory (Bandura, 1986), I found a positive relationship between changes in students' writing skills self-efficacy and improvements in students' performance. Even though the mean score for writing skill self-efficacy dropped during the semester, the correlation between skill self-efficacy and performance rose from -.1 at the beginning of the semester to .31 at the end of the semester. This indicates that by the end of the semester the students' confidence in their ability to use the meta-skills involved in the writing process more realistically reflected their actual writing ability.

Finally, social cognitive theory postulates a positive relationship between changes in self-efficacy and changes in performance that is only loosely related to actual ability

(Bandura, 1993). Consistent with that argument, I found ceiling effects for both measures of self-efficacy at the beginning and end of the semester, and floor effects for writing performance.

Achievement Goal Orientation and Writing Performance.

The students' goal orientation changed very little during the semester and these changes produced no statistically significant relationships with changes in students' writing performance. Furthermore, unlike the earlier research by Lackey, et al. (1996), in this research I found no relationship between task involvement and initial writing performance, or any other motivational variables. Several differences between the two studies may explain this. One explanation might be that the students in the Lackey et al., study were junior level students who remained in a longitudinal research project after three years. Other than a $50.00 per year stipend, the students in the Lackey et al., study received no extrinsic rewards. They received no feedback on their writing, and therefore, no praise. Since there were no ego related incentives for writing performance, the only factor likely to influence variations in their writing performance would be task related incentives (e.g., the pleasure of writing, the challenge of writing, and so on). By contrast, the students in the present study were from the general university population in a required freshman English composition class. As such, these students were under pressure to make acceptable grades (i.e., a performance goal). The additional points offered on the students' course grades for their performance in this research might have also shifted the students' focus toward adopting performance goals at the expense of learning goals. However, an

alternate explanation of the difference between the two groups might be that students become more task oriented as they progress in college or that task involved students may be more likely to stay in college than ego involved students.

Relationships Among Self-Efficacy, Goals and Writing Performance.

Goal orientation theory (Dweck, 1986; Nicholls, 1989) predicts that ego involved individuals with high self-efficacy will study hard, and consequently, their performance will improve. Consistent with this contention, I found the previously mentioned ceiling effects for self-efficacy and a statistically significant positive relationship between initial ego involvement and improvements in writing performance.

Also consistent with previous research, (Greene & Miller, 1996; Miller et al., 1993), I found positive correlations between both measures of self-efficacy and task goals. While Nolen (1988) feels this relationship is irrelevant, it is difficult to imagine students being motivated to master a task if they feel that progress toward mastery is impossible.

Relationships Among Types Of Written Feedback, Changes In Writing Performance, And Motivational Variables.

Consistent with Butler's research (1987), which indicates that task specific comments improve both task involvement and performance, I found a statistically significant positive correlation between the number of task specific comments the students received and improvements in the students' task involvement and a statistically significant positive relationship between the number of task specific comments the students received

and improvements in the students' writing ability. Even though task specific comments comprised only one third of the comments the students received, multiple regression analysis indicated that they were the only comments that were significantly related to improvements in students' written performance. Additionally, the teachers who gave the most task specific comments also saw their students performance improve the most.

Consistent with Butler's (1987) contention that praise given in a manner that does not promote task involvement fails to improve performance, I found that praise had little relationship to performance. However, I also found little relationship between praise and self-efficacy. Teacher E gave significantly more directed praise than the other teachers but this teacher's students' saw only a slight improvement in their self-efficacy. By contrast, teachers A and D gave significantly more task specific comments during the semester, and their students' self-efficacy rose somewhat. However, teacher A's students self-efficacy rose the most. Of the variables investigated, the main difference between teacher A and teacher D was that the average grade in teacher D's class was 2.5 while the average grade in teacher A's class was 3.1. Even though teacher A gave higher grades than teacher D, teacher A's students' average written performance increased by .2 points while teacher D's students average writing scores improved by .41 points. One might suspect that the teachers' students differed on initial performance and therefore teacher D's students' had more room for improvement. However, a one way ANOVA (appendix 5, table 9) indicated no statistically significant differences ($F = .76$, $p = .55$) among teachers in the initial writing performance of their students.

In addition, the regression analysis presents an interesting picture of the relationship between grades and changes in writing performance. When considered by themselves, grades produced a non-significant correlation with changes in performance. However, when considered in a regression model with other variables, grades had a statistically significant positive relationship with changes in performance but only when the shared variance of grades and non-directed praise was partialed out of grades. According to Bazerman (1988) the meaning of writing is contained both within the text, as well as outside the symbols used to clothe meaning in text. That is, the use of language is a social act and, "Can only be understood in the context of social action in specific situations" (pp. 21-22). Therefore, the non-directed praise that students received may reflect some aspect of social action (e.g., effort, persistence, improvement) on the part of the student that is not apparent in holistic grading rubrics and unavailable to independent graders.

More specifically, a part of the grade that students earned reflected factors actually related to writing performance as determined by independent evaluators. Another part of the grade reflected the other social actions that were also reflected in non-directed praise. When non-directed praise was partialed out, that allowed the writing performance aspect of grades to surface more clearly. If students assume that the grades they receive depend entirely on their writing performance, and such discrepancies between actual changes in performance and the grades that students receive occurs regularly, this would help explain the ceiling effect for the students' initial self-efficacy and the sharply contrasting floor effect for their initial writing scores. That is, since their grades depend on factors other than performance, these students lacked a clear understanding of both the writing process,

and their own ability. However, due to previous academic successes (i.e., getting accepted into the university, passing their first semester of English composition, and so on) the students felt they were good writers. According to social cognitive theory (Bandura, 1986), these students should feel motivated to invest time and effort toward improving their skills, and should be fairly resistant to learned helplessness. They should have responded well to any feedback they felt would improve their writing performance. This would explain the statistically significant positive relationship between the number of task specific comments the students received and improvements in performance and improvements in the student's task involvement.

The two best predictors of changes in task specific self-efficacy were the number of task specific comments the students received and the grades they received. This correlational evidence is consistent with the causal influences suggested by social cognitive theory (Bandura, 1986). One would expect that the students' ability to write would improve as the teachers gave them specific feedback indicating how they could improve their performance. At the same time, one might expect the students to view the grades they received as indicators of their ability to use the writing skills they learned in class. Other types of evaluative feedback, like directed and non-directed praise, seemed to have little effect on the students ability judgments beyond that of grades.

Even though changes in writing skill self-efficacy were the best predictors of changes in writing performance, the only types of written feedback to produce statistically significant correlations with changes in writing skill self-efficacy were directed praise and grades. When entered together in multiple regression, grades became the only statistically

significant predictor of changes in writing skill self-efficacy. Thus it appears that while the students considered directed praise an important factor in judging their ability to use certain writing meta-skills, the main factor in making this determination was the grade they received on their papers. This is also consistent with social cognitive theory (Bandura, 1986).

Contrary to Butler's research (1987, 1988) which indicated that giving students grades increased their ego involvement and decreased their task involvement, I found no such relationship. In addition to finding a statistically non-significant correlation between grades and ego involvement, I also found a stronger, but still statistically non-significant correlation between grades and task involvement. Several differences in this research and Butler's research might explain these discrepancies. Butler's research was conducted in a laboratory setting over three days and the participants were grade school students. Furthermore, the students in Butler's research received only one opportunity to respond to the feedback they received and the response time was limited to a few minutes. As mentioned previously, the grades in Butler's research were not linked to promotions or any other external measure of success. Under these conditions grades might serve the same function as praise. In fact, Butler's research indicates similar effects for grades and praise.

By contrast, my research was conducted under actual classroom conditions and the participants were college freshmen. These students received substantially more feedback along with more opportunities to respond to that feedback than the students in Butler's research. However, the main difference between this research and Butler's research is that

the grades the students received in the classroom were linked to several additional factors not necessarily related to ego enhancement. The grades that students receive in the classroom are directly related to staying in college, maintaining a scholarship, and so on. These grades are linked to the way students respond to the feedback that they receive from their teachers. Therefore, the students in my research may have focused more attention on task specific comments because they felt these comments contained information they could use to improve their performance, and therefore, their grades. Focusing on task specific comments may have inadvertently increased their task involvement rather than their ego involvement.

Since non-directed praise contained no information the students could use to improve their performance, it is not surprising that these comments had no relation with changes in performance. Most papers contained, at least, a single comment like this, so these students may have felt that comments containing non-directed praise were meaningless. Alternatively, the students' high initial self-efficacy may also explain these results. In another setting where the participants were less sure of their writing ability these results might differ.

Consistent with social cognitive theory, directed praise had a modest correlation with self-efficacy for writing skills. However, the effects of directed praise failed to extend to the students' self-efficacy for the specific writing task. As mentioned earlier, the ceiling effect for the students' initial self-efficacy for this type of writing task left little room for improvement and, therefore, the students' task specific self-efficacy changed little during the semester. However, the students may have seen little relationship between the directed

praise they received on their assignments and their ability to respond to separate, class independent measures of writing ability. This would be consistent with McCarthy's (1987) research which indicates that students often see no relationship between writing done in one setting and writing done in another setting.

Consistent with Sommers (1982) contention, the second most common type of feedback the students received came in the form of task ambiguous comments. While I hypothesized that comments of this type might lower self-efficacy, nothing in this research supports that hypothesis. Since this type of feedback failed to produce any statistically significant relationship with changes in writing performance or changes in motivation, all one can conclude is that no relationship exists. In defense of the teachers, nothing in this research indicates that the teachers intentionally gave this type of feedback. To reiterate Sommers (1982) point, the teachers need training in order to give effective feedback.

As with the task ambiguous comments, and also consistent with Sommers (1982), I found no statistically significant relationships between the number of atheoretical comments that the students received and changes in writing performance or motivation. Therefore, it seems that correcting a student's error with out indicating why the error is an error fails to impact either performance or motivation.

As mentioned earlier, all but one of the teachers participating in this research failed to tell their students how they scored on the initial writing prompt until the end of the semester. If this communications failure influenced the results, then there should have been differences in changes in motivation and changes in writing performance in this teacher's students that were not explained by variations in written feedback. In fact, the

teacher who told the students their initial scores also saw the most improvement in his students' writing scores and task involvement during the semester. However, this teacher also gave the highest number of task specific comments. The teacher who gave the second highest number of task specific comments saw improvements in his students' writing scores and task involvment that were second only to the previously mentioned teacher. Therefore, it seems that this communication failure contributed little to the results.

When Considered Together, Which Types Of Written Feedback Are The Best Predictors Of Changes In Written Performance And Changes In Motivational Variables?

Consistent with Butler's (1987) research which indicated that giving students task specific written feedback improves their performance, I found a positive statistically significant relationship between the number of task specific comments that students received and improvements in their writing. Contrary to later research by Butler (1988) which indicated that giving students grades prevented increases in task involvement and improvements in performance, the only other type of written feedback to have a statistically significant positive correlation with changes in writing performance was the grades the students received on their papers. This research differs substantially from Butler's in that the grades in this research were linked to performance while the grades in Butler's research were not. Since my research was correlational rather than causal, all I can say is that this relationship exists. In fact, the grades the students received might reflect improvements in writing performance rather than cause them.

While task involvement did not change enough during the semester to approach statistical significance at the .05 level, consistent with Butler (1986) I found a statistically significant correlation between changes in task involvement and the number of task specific comments that the students received during the semester. This indicates that, even though the changes in task involvement were small, the changes that occurred were related to the number of task specific comments that the students received.

Ego involvement did not change enough during the semester to approach significance at the .05 level nor did it produce significant correlations with any type of written feedback that the students received. These results may indicate that ego involvement is, indeed, trait like, and therefore highly resistant to change. However, since these students had to pass this class in order to continue in college, they may have entered this course with their ego involvement as high as their individual trait would allow it to go. I will discuss this more in the next section.

Interpretations

This research extends Butler's research and suggests that giving students task specific comments may improve their task involvement and writing performance under actual classroom conditions as well as under controlled conditions. However, these findings do not entirely agree with Butler's (1988) research where she found that, under controlled conditions, students who received task oriented comments, evaluative comments, and grades, became more ego involved and their performance failed to improve. Even though the participants in this research received grades, praise, and task

specific comments, I still found a statistically significant positive relationship between the number of task specific comments the students received and increases in their task involvement, as well as a statistically significant positive relationship between the number of task specific comments the students received and improvements in their writing performance. This represents an important point because it indicates that having to give grades may not preclude the possibility of also improving the students' task involvement. At the same time, I found no statistically significant relationships between any type of feedback investigated and changes in ego involvement.

As mentioned previously, this research differs from Butler's research in that these students received a series of comments on several papers written over the course of a semester while Butler's students received single comments on a few assignments given over a few weeks. The students in this research received more comments, a larger variation of comments, and comments spread over a longer period of time. Furthermore, Butler's students were grade school students while the students in the present study were college freshmen in a required course. Since college students have to make a good grade to continue in college they are forced by circumstances to adopt a certain amount of ego involvement. In Butler's research there were no extrinsic rewards (i.e., staying in school, keeping a scholarship, and so on) attached to either the grades or the praise the students received, and the students were not expected to revise their assignments based on this feedback. Finally, as mentioned earlier, the grades the students received in Butler's research were not linked to performance. Therefore, Butler's students may have felt less pressure to perform and processed their feedback at a more superficial level.

For these reasons, it seems that the interactions of these variables are more complex than Butler's research indicates. One cannot state that giving students task specific comments along with evaluative comments and grades causes the student to adopt ego involved goals at the expense of task involved goals, or that performance fails to improve under these conditions. However, one can say that a positive relationship exists between the number of task specific comments that students receive and both the students' task involvement and improvement in their performance. n addition to the previous considerations, this research suggests that task specific comments may be the only type of written feedback that directly improves students' writing performance, while grades may indirectly improve performance by improving self-efficacy.

Consistent with Sommers (1982), correcting students' grammatical errors, and rewriting their sentences may improve a specific section of a paper, but will not improve students' writing, I found no relationship between this type of feedback and changes the in students' writing performance. Also consistent with Sommers (1982), task ambiguous comments had no relationship with changes in writing performance. Task ambiguous comments seemed to come in two forms. The first form consisted of superfluous verbiage, such as "Perhaps you might want to...." , or "I think I see your point, but....". It may be that some of the teachers did not feel comfortable with specifically targeting a problem and telling the student how to address the problem. Therefore, they used directed praise as an ambiguous apologetic segue to ease the student into the crux of the problem. Consequently, it was often difficult for the student to specifically identify either the problem, or the solution to the problem. Since these teachers were all graduate teaching

assistants, they may have lacked confidence in their ability to both teach, and evaluate the students papers. Furthermore, knowing that improvements in their students' writing performance would be independently assessed might have forced them into a more performance oriented approach.

Although the issue of superfluous verbiage should be easy to correct, I also found another type of task ambiguous feedback that was simply incoherent. This type of feedback seems to happen when teachers attempted to give a concise explanation for a plethora of problems. That is, some of the teachers seemed to condense explanations that require several paragraphs of explanation into a few sentences. When faced with overwhelming problems on a student's paper, some of the teachers wrote, "I cannot grade this paper like it is, come see me in my office so we can discuss this." It seems that the latter would be a better approach because it allows the teacher to discuss the problems in greater detail, and allows the student to ask questions. However, this research failed to investigate the point where a student's paper contains more problems than one can address in the form of written feedback.

This research also indicates that improvements in the students' confidence in their ability to perform the meta-skills necessary for effective writing is the best motivational predictor of changes in writing performance, but the best predictor of changes in the students confidence in their ability to perform these meta-skills was the grades they received during the semester. This seems to represent a circular relationship in that changes in any of the three variables (i.e., performance, grades, self-efficacy for meta-skills) should cause changes in the other variables. Given this logic, teachers could

improve performance by giving the students higher grades. This may seem contrary to common sense, and in fact, this research indicates a tenuous relationship between grades and performance. However, Bandura (1986) feels that high self-efficacy enhances generative problem solving. That is, students with high self-efficacy tend to adopt or generate new strategies when faced with failure. This willingness to continually modify their schema until it produces the desired results, improves performance, and improved performance raises self-efficacy. However, when students with low self-efficacy face failure, they are more likely to continue with faulty or poorly understood strategies. This leads to repeated failure which lowers self-efficacy. At the same time, high self-efficacy tends to ameliorate the adverse effects normally associated with high ego involvement (Nicholls, 1989; Dweck, 1986; Dweck & Leggett, 1988). That is, while ego involved students with low self-efficacy tend to adopt helpless responses (i.e., lack of effort and persistence), ego involved students with high self-efficacy tend to work hard and persist until they receive some form of positive recognition for their performances. For these reasons, it is difficult to make any definitive statement on the relationships among these three variables.

Suggestions For Future Research

Due to the differences among teachers on changes in performance and self efficacy, future research might investigate differences among teachers' in self-efficacy and achievement goal orientation as well as students. Furthermore, future research might

investigate relationships among teachers' self-efficacy and goal orientations' and the frequency with which this type of feedback is given.

To investigate the relationships among types of written feedback on changes in motivational variables and writing performance as well as the relationships among motivational variables on changes in writing performance, I had to create a schema for coding the written feedback that the students received. A potential problem with the coding schema was that it gave equal weight to praise and criticism. Criticism might have more impact on the students' attitudes than praise and the two may not directly cancel each other. However, the teachers participating in this research gave their students very little criticism so, in this case, the problem represents less of an issue. Future research might investigate these relationships in greater detail.

Finally, this research was correlational, and therefore I cannot say that increasing the number of task specific comments will improve writing performance, self-efficacy, or anything else. Therefore it seems that the next step in this research is to train a group of novice teachers to give more task specific comments and avoid giving ambiguous and atheoretical comments. If the students of the teachers trained in this manner learn to write better than the students of teachers not trained in this manner, I will be able to make a more definite statement about these relationships. Future research might also attempt to determine when teachers should quit attempting to correct all of the problems with written feedback and request a conference with the student.

Conclusion

Consistent with Sommers (1982) contention that teachers need training in the effective use of feedback, this research found that even though task specific comments represented one third of the comments that students received, they were the only type of feedback to have a statistically significant positive relationship with improvements in the students' performance. The relationship between the grades that students receive in class and independently assessed measures of writing performance only became statistically significant when the shared variance of task specific comments was partialed out of grades. This relationship between grades and performance was further strengthened by partialing out the shared variance of non-directed praise. However, this research also indicates the only motivational variable investigated to have a statistically significant relationship with improvements in performance was the students self-efficacy for writing skills. Of the types of feedback investigated, the only type of feedback to have a statistically significant relationship with changes in skill self-efficacy was the grades the students received. Furthermore, it seems that task specific comments also indirectly improve performance by improving the students self-efficacy. Therefore, it seems that while the relationship between performance and grades is not entirely clear, it also seems that we need to consider changes in self-efficacy when looking at relationships between grades and changes in performance.

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Appendix 1

Directions: Write a critique of the argument presented below. You may, for example, consider what questionable assumptions underlie the thinking, what alternative explanations or counter-examples might weaken the conclusion, or what sort of evidence could help strengthen or refute the argument.

Read the argument and the directions that follow it, and then make any notes that will help you plan your response. Begin writing your response after you have re-read the instructions closely. Make sure you do what you are asked.

The following appeared in an Avia Airlines departmental memorandum.

"On average 9 out of every 1,000 passengers who traveled on Avia Airlines in 1993 filed a complaint about our baggage-handling procedures. This means that although some 1% of our passengers were unhappy with those procedures, the overwhelming majority were quite satisfied with them; thus it would appear that a review of those procedures is not important to our goal of maintaining or increasing the number of Avia's passengers."

Discuss how logically convincing you find this argument. In explaining your point of view, be sure to analyze the line of reasoning and the use of evidence in the argument. Also discuss what, if anything, would make the argument more sound and persuasive, or would help you to better evaluate its conclusion.

Appendix 2

SCORE
5 OUTSTANDING

A 5 paper presents a cogent, well-articulated critique of the argument and demonstrates mastery of the elements of effective writing.

A typical paper in this category

- clearly identifies and insightfully analyzes important features of the argument
- develops ideas cogently, organizes them logically, and connects them smoothly with clear transitions
- effectively supports the main points of the critique
- demonstrates control of language, including diction and syntactic variety
- demonstrates facility with the conventions of standard written English but may have minor flaws

4 STRONG
A 4 paper presents a well-developed critique of the argument and demonstrates good control of the elements of effective writing.

A typical paper in this category

- Clearly identifies important features of the argument and analyzes them in a generally thoughtful way
- develops ideas clearly, organizes them logically, and connects them with appropriate transitions
- sensibly supports the main points of the critique
- demonstrates control of language, including diction and syntactic variety
- demonstrates facility with the conventions of standard written English but may have occasional flaws

3 ADEQUATE

A 3 paper presents a competent critique of the argument and demonstrates adequate control of the elements of writing.

A typical paper in this category

- identifies and capably analyzes important features of the argument
- develops and organizes ideas satisfactorily but may not connect them with transitions
- supports the main points of the critique
- demonstrates sufficient control of language to convey ideas with reasonable clarity
- displays control of the conventions of standard written English but may have some flaws

2 LIMITED

A 2 paper demonstrates some competence in its critique of the argument and in its control of the elements of writing but is clearly flawed.

A typical paper in this category exhibits one or more of the following characteristics:

-- does not identify or analyze most of the important features of the argument, although some analysis is present
-- is limited in the logical development and organization of ideas
-- offers support of little relevance and value for points of the critique
-- uses language imprecisely
-- contains occasional major errors or frequent minor errors in grammar, usage, and mechanics

1 SERIOUSLY FLAWED

A 1 paper demonstrates serious weaknesses in analytical writing skills.

A typical paper in this category exhibits one or more of the following characteristics:

-- does not understand, identify, or analyze the main features of the argument
-- does not develop ideas or is disorganized
-- provides little, if any, relevant or reasonable support
-- has serious and frequent problems in the use of language and sentence structure
-- contains numerous errors in grammar, usage, and mechanics that interfere with meaning

0 FUNDAMENTALLY DEFICIENT

A 0 paper demonstrates fundamental deficiencies in analytical Writing skills.

A typical paper in this category exhibits one or more of the following characteristics:

-- provides little evidence of the ability to understand and analyze the argument or to develop an organized response to it
-- has severe and persistent errors in language and sentence structure
-- contains a pervasive pattern of errors in grammar, usage, and mechanics, thus resulting in incoherence

Appendix 3

Residualized Gain Score Analysis

To analyze changes in students' scores, a residualized gain score analysis will be done. Laird (1983) and Pike, (1992) feel that residualized gains score analysis represents a more reliable indicator of differences between two sets of scores than using the remainder. Residualized gain score analysis regresses one set of scores on another set of scores and use the residuals as indicators of differences between the two scores. This method, weights differences between the pretest and posttest relative to the covariance between the pretest and the posttest. That is, a residualized change score represents the distance, on the y axis, between the regression line and the raw score. To illustrate the advantage of using this approach, consider the following set of pretest and posttest scores. Assume a minimum possible score of 0 and maximum possible score of 5 on both the pretest and posttest.

	Pretest	Posttest	Difference	Residual
Student 1	3	3	0	0.000
Student 2	1	5	4	2.667
Student 3	5	1	-4	-2.667
Student 4	2	4	2	1.333
Student 5	4	2	-2	-1.333
Student 6	0	0	0	-2.000
Student 7	5	5	0	1.333
Student 8	0	1	1	-1.000
Student 9	4	5	1	1.667

Now consider the scenario using the difference of the two scores. Student eight's score changed from the minimum score to slightly above the minimum, while student nine's score moved from slightly below the maximum score to the maximum score. In

spite of a 4 point difference on final scores of students' eight and nine, this method indicates the same degree of change (i.e., .1). Furthermore, even though student nine moved from a nearly perfect score of 4 to a perfect score of 5, this method puts student nine's degree of change below student four, who moved from a 2 to a 4. Student seven scored the maximum on the pretest, and therefore had no room to improve on the posttest, this method indicates that student seven's degree of change was the same as student one, who made a 3 and a 3, and student six, who made a 0 and a 0. Student seven's degree of change was below student two, who made a 1 and a 5, student four, who made a 2 and a 4, student eight who made a 0 and a 1, and student nine who made a 4 and a 5. While the difference in the pretest and the posttest represent the actual changes in the raw data, this method fails to account for possible floor and ceiling effects. That is, this method fails to weight actual change relative to maximum possible change. Therefore, this method underestimates changes between the pretest and posttest (Laird, 1983; Pike, 1992).

Now notice the residualized gain scores. The highest score goes to student 2 whose score improved from slightly above the minimum score to the maximum score. The next highest score went to student 9 who moved from slightly below the maximum score to the maximum score. The third highest score went to students 5 and 4. Student 5 scored the maximum on the preset and posttest , while student 4 scored a 2 on the pretest and a 4 on the posttest. Likewise, the lowest residualized change score went to student 3 who went from the maximum pretest score to one point above the minimum score on the posttest. The next lowest score went to student 5 who scored a 4 on the pretest and a 2 on

the posttest. Student 1 hovered around the mean score on both test and received a change score in the middle of the distribution.

From this scenario, the reader can see that using residualized gain scores gives the researcher a clearer indication of the changes between two dependent variables. Using residualized gain scores as the dependent variable in a regression analysis gives the researcher the same information as using an analysis of covariance, as well as, correlational information and information that estimates how changes in the independent variables (i.e., the treatment) should effect changes in performance. For these reasons, this research will use residualized gain scores to indicate changes in self-efficacy, goal orientation, and writing performances between the beginning and end of the semester.

Appendix 4

Directions For Coding

Count the number of task specific comments, comments that contain non-directed praise, the comments that contain directed praise, grades, unclear comments, and atherotical comments then enter the number in the appropriate cell on the spreadsheet. Separate multiple comments in their respective components. When the teachers break their evaluations into several components, code each response accordingly.

t specific:

Task specific comments are comments that target a specific issue and give information for understanding or improving the participants writing. Task specific comments tell the students what the problem is, why a problem is a problem, how to address, a problem, or in some way cause the students to think about their writing in a different way. These comments may request clarification and elaboration (e.g.., how, why, who), or may be more elaborate (e.g.., by what ethical standard?). Count each task specific comment as 1 point.

t ambiguous

Task ambiguous comments are comments that target an issue but give ambiguous, unclear or contradictory directions on how to address that issue. Task ambiguous comments leave the students asking either, "What is the teacher trying to tell me?", or Why is the teacher telling me this?" The following examples illustrate task ambighous feedback.

1. When teachers break their grading procedures into sections and grade each section individually (e.g.., so many points for content, so many points for organization, and so on) the students know the strengths and weaknesses of certain sections of their papers, but do not know why certain sections are strong or weak and do not know how to improve the weak sections. Therefore this type of feedback is ambiguous and unclear. Count each section as 1 point.

2. Teachers often underline, circle, check, or otherwise indicate certain sections of a paper with no explanation. The students do not know whether to ignore these marks or respond to them. Therefore this feedback is ambiguous. Count each comment as 1 point.

3. Editorial notations, cryptic corrections that the teacher understands but the students do not, would be categorized as ambiguous. For example, 1 2 3, a b c, wc, and so on would be unclear because these marks mean something and the students' may feel they must respond to them. However, the students the inability to understand these comments precludes an appropriate response. Count each comment as 1 point.

4. Words like strong, weak, and expand direct the student's attention to a certain section of the writing but give ambiguous feedback on how to respond. If the feedback does not indicate why the writing is strong or weak, or does not indicate how to make the writing stronger, then the feedback would be ambiguous. For example, "weak conclusion" does not indicate why the conclusion is weak or how to make it stronger. Therefore, terms like "weak conclusion would be ambiguous.

A comment like, "expand this conclusion" would give the student ambiguous directions to follow. This comment would not tell the student why the conclusion needed expanded or how to expand the conclusion. Therefore, terms like "expand this conclusion" would be ambiguous.
Count each comment as 1 point.

5. Teachers occasionally give feedback that contradicts itself. For example, a teacher might write, "well organized, but the organization begins to break down in paragraph 2. Perhaps you should ... to

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improve the organization." In this case the student does not know what to believe. Count each comment as 1 point.

6. Teachers sometimes offer a personal response or editorial comment to a feature of the text. For example, in response to a student's comment that since Hitler was of white Aryan descent, he had naturally chosen that race as supreme, one teacher wrote, "also Jewish & therefore blood poisoned." In another case, a teacher might preface a comment with I think, I feel, I see, or something that changes the feedback from a constructive comment about the student's writing to a personal comment about how the teacher thinks, feels, and so on. These comments contain no information that indicates how the student should respond. Should the student incorporate these comments into the text, and if so, how? Are the students free to ignore these comments ? For these reasons, teachers personal responses that give no directions how the students should respond would be ambiguous. Count each comment as 1 point.

nd praise:

Non-directed praise or criticism is an evaluative comment at the global level that is not directed toward any specific section of the paper and gives no feedback that students might use to understand or improve their writing (e.g., the instructor writes "good paper"). Count praise as 1 and criticism as -1.

d praise:
Directed praise is an evaluative comment at the local level that is directed toward a specific section of the paper but gives no feedback the students might use to understand or improve their writing (e.g., the instructor writes "good introduction, circles, underlines, or otherwise indicates a passage of text and writes "good") . Count praise as 1 and criticism as -1.

grade:
If the paper contains a grade, enter the grade in the grade column. Convert all grades to a 4 point scale. That is, 90 to 100 = an A which = 4 points, 89 to 90 = a B which = 3 points, and so on.

atheory:
Atherotical comments are all other types of feedback that do not fit any of the above descriptions. For example, spelling corrections, the elimination of passive voice, grammar corrections. sentence rewrites, and so on would be atherotical comments. If the feedback indicates several corrections need to be made in a single sentence, count each correction as 1. If the corrections indicate a sentence rewrite rather than correction of specific grammatical problems, count the rewrite as 1. These comments usually indicate how the students should improve the text at hand rather than their writing ability. Therefore, if a teacher writes, "avoid the passive voice" that is a task specific comment. However, if the teacher marks out words like was, were, and so on, each time the teacher marks a work out that is an atherotical comment.

Appendix 5
Non-signifigent statistics

Table 1.
Dependent t-test of initial and final ego orientation scores.

Variable	Number of pairs	Corr	2-tail Sig	Mean	SD	SE of Mean
EGOOPOS	137	-.042	.628	3.1650	.762	.065
EGOOPRE				3.1847	.858	.073

Paired Differences: Mean	SD	SE of Mean	t-value	df	2-tail Sig
-.0198	1.171	.100	-.20	136	.844
95% CI (-.218, .178)					

Table 2.
Dependent t-test of initial and final task orientation scores.

Variable	Number of pairs	Corr	2-tail Sig	Mean	SD	SE of Mean
TSKOPOS	137	-.076	.374	3.9988	.612	.052
TSKOPRE				4.0073	.655	.056

Paired Differences: Mean	SD	SE of Mean	t-value	df	2-tail Sig
-.0085	.930	.079	-.11	136	.915
95% CI (-.166, .149)					

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Table 3.

Regression analysis of realtionship between changes in task involvement and changes in ego involvment

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Variable(s) Entered on Step Number
   1..    RES_E_OR  Residual

Multiple R              .16079
R Square                .02585
Adjusted R Square       .01864
Standard Error          .60437

Analysis of Variance
                    DF        Sum of Squares        Mean Square
Regression           1              1.30859             1.30859
Residual           135             49.31010              .36526

F =       3.58264       Signif F =  .0605


------------------ Variables in the Equation ------------------

Variable                B         SE B        Beta         T          Sig T

RES_E_OR          .128854      .068077     .160786     1.893  .0605
(Constant)  -4.88974E-16      .051635                    .000  1.0000
```

Table 4.

One way ANOVA with Tukey HSD post hoc analysis for changes in task involvement by teacher.

Source	D.F.	Sum of Squares	Mean Squares	F Ratio	F Prob.
Between Groups	3	2.4632	.8211	2.3468	.0766
Within Groups	111	38.8351	.3499		
Total	114	41.2982			

Multiple Range Tests: Tukey-HSD test with significance level .050
- No two groups are significantly different at the .050 level

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Table 5.

One way ANOVA with Tukey HSD post hoc analysis for changes in ego involvement by teacher.

Source	D.F.	Sum of Squares	Mean Squares	F Ratio	F Prob.
Between Groups	4	4.7936	1.1984	2.1464	.0786
Within Groups	131	73.1407	.5583		
Total	135	77.9343			

Multiple Range Tests: Tukey-HSD test with significance level .050
- No two groups are significantly different at the .050 level

Table 6.

One way ANOVA with Tukey HSD post hoc analysis for the number of coments containing non-directed praise grouped by teacher.

Source	D.F.	Sum of Squares	Mean Squares	F Ratio	F Prob.
Between Groups	3	3.7309	1.2436	2.0680	.1089
Within Groups	105	63.1431	.6014		
Total	108	66.8740			

Multiple Range Tests: Tukey-HSD test with significance level .050
- No two groups are significantly different at the .050 level

Table 7.

One Way ANOVA With Tukey HSD Post Hoc Analysis Of Task Ambiguous Written Feedback Grouped By Teacher.

Source	D.F.	Sum of Squares	Mean Squares	F Ratio	F Prob.
Between Groups	3	502.5822	167.5274	18.7383	.0000
Within Groups	105	938.7384	8.9404		
Total	108	1441.3207			

Multiple Range Tests: Tukey-HSD test with significance level .050
(*) Indicates significant differences which are shown in the lower triangle

Teacher	Mean	Teacher 2	1	5	4
2	6.3036				
1	8.1474				
5	11.0399	*	*		
4	12.1699	*	*		

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Table 8.

One way ANOVA with Tukey HSD post hoc analysis of atheoritical written feedback grouped by teacher.

Source	D.F.	Sum of Squares	Mean Squares	F Ratio	F Prob.
Between Groups	3	845.1905	281.7302	16.1263	.0000
Within Groups	105	1834.3766	17.4703		
Total	108	2679.5670			

Multiple Range Tests: Tukey-HSD test with significance level .050
(*) Indicates significant differences which are shown in the lower triangle

Teacher	Mean	Teacher 4	1	2	5
4	2.4936				
1	4.2786				
2	8.6980	*	*		
5	9.0136	*	*		

Table 9.

One way ANOVA of initial writing performance grouped by teacher.

Source	D.F.	Sum of Squares	Mean Squares	F Ratio	F Prob.
Between Groups	4	3.5302	.8825	.7612	.5523
Within Groups	131	151.8742	1.1593		
Total	135	155.4044			

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